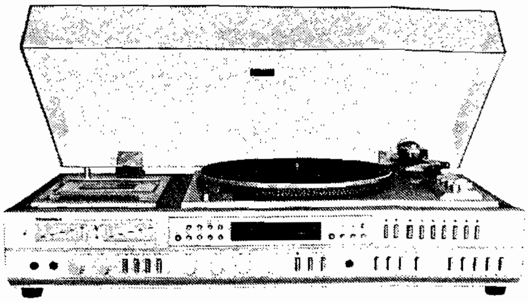
1750

SERVICE DATA
FILE NO. 140-103

[illegible]

TOSHIBA
STEREO MUSIC CENTRE
SM-4750



SPECIFICATIONS

■ General Data

Power Supply:	220V 50 Hz for Europe 240V 50 Hz for United Kingdom & Australia
Power Consumption:	250W
System Dimensions (mm):	(W)692 x (H)109(210) x (D)430
System Weight:	20.5 kg

■ Amplifier

Continuous Power:	2 x 56W, 1% THD at 4 ohm (each channel driven) 2 x 44W, 1% THD at 8 ohm (each channel driven) 2 x 44W, 1% THD at 4 ohm (both channels driven) 2 x 36W, 1% THD at 8 ohm (both channels driven)
Frequency Response:	30 Hz – 20 kHz (–3 dB)
Difference Output:	2 dB
Crosstalk Attenuation:	45 dB at 1 kHz
Signal to Noise Ratio:	65 dB
Sensitivity at Rated Power Output:	Moving magnet cartridge: 3.0 mV (10 cm/sec.) at 1 kHz
Input:	Tape in: 150 mV
Input Impedance:	Tape in: 100K ohm at 1 kHz
Recording Output:	150 mV 10K ohm
Tone Control:	Bass: ±10 dB at 100 Hz Treble: ±10 dB at 10 kHz
Headphones:	Recommended impedance of headphones more than 8 ohms

■ Tuner

Micro computer controlled frequency synthesizer tuning

Frequency Range:	FM 87.5 – 108.5 MHz 422 channel LW 146 – 281 kHz 136 channel MW 522 – 1611 kHz 1090 channel SW 5.9 – 6.3 MHz 81 channel
Memory:	8 channels each band (FM/SW/MW/LW)
Functions:	Auto tuning (FM 100 kHz, MW 9 kHz step) Manual scanning FM + 50 kHz shifting reception

FM Band

Aerial:	External aerial (300 ohm and 75 ohm)
Usable Sensitivity:	Mono: 4.0 µV
Signal to Noise Ratio:	Mono: 70 dB (40 kHz deviation at 1 kHz)
Distortion:	0.2% at 1 kHz
AM Suppression:	40 dB
Separation at 1 kHz:	35 dB

AM Band

Aerial:	Ferrite core aerial (Built in)
Usable Sensitivity:	LW: 400 µV/m MW: 200 µV/m SW: 100 µ/m

■ Turntable

Drive System:	Direct drive/Full auto
Drive Motor:	Coreless and slotless DC servo controlled motor
Turntable Platter:	31 cm with stroboscope
Speeds:	33-1/3 & 45 r.p.m.
Wow & Flutter:	±0.05% (DIN-45507) W. zero to peak
Signal to Noise Ratio:	65 dB (DIN-45539B)
Cartridge Type:	C-290M
Stylus:	N-490D
Optimum Tracking Force:	1.75 g ± 0.25 g

■ Cassette Recorder

Usable Tape:	Compact cassette
Tape Speed:	4.75 cm/s
Recording System:	AC Bias
Erasing System:	AC Erase
Track System:	4 Track/2 channel stereophonic
Heads:	Record/Playback head, Erase head
Frequency Response:	40 Hz – 10 kHz (±3 dB)
Signal to Noise Ratio:	55 dB

■ Digital Clock

Display:	24 hour, green LED, hour, minute, second
Functions:	Auto check for tuned frequency and auto-start time Sleep max. 59 min.
Clock Type:	AC line frequency

■ Accessories

FM feeder aerial
EP record adaptor

Specifications are subject to change without notice.

TE, TU, AY

[illegible]

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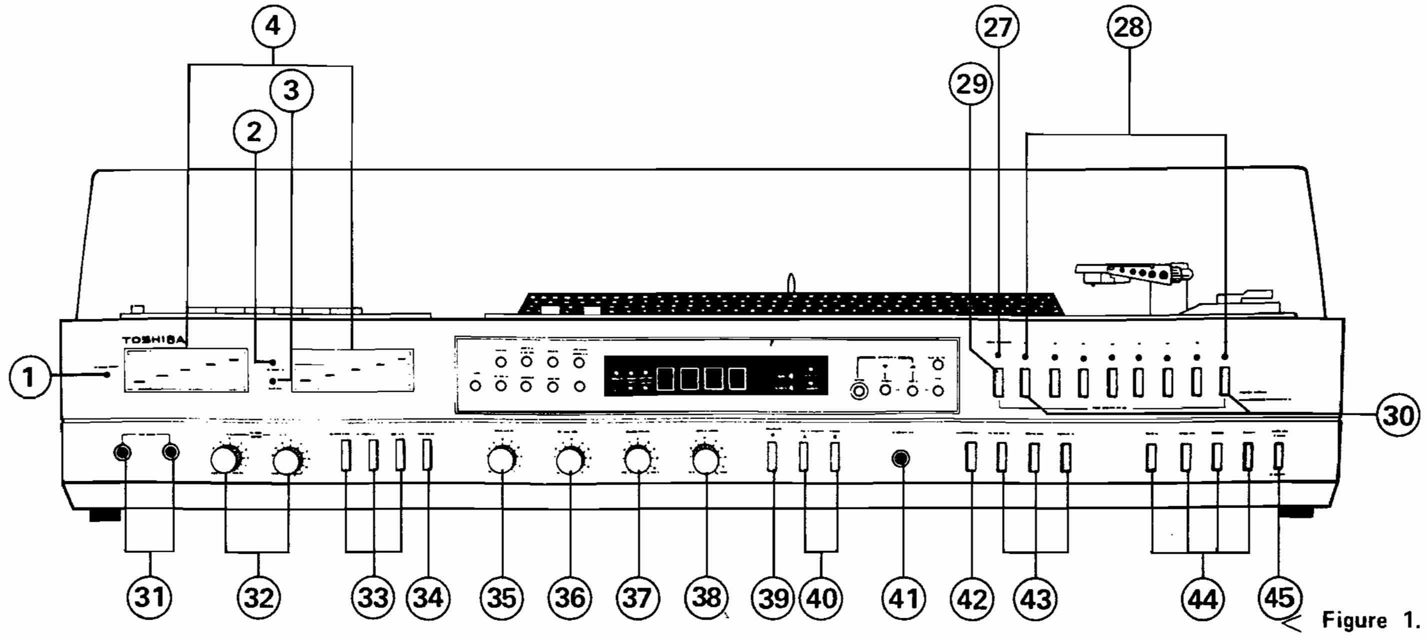


Figure 1.

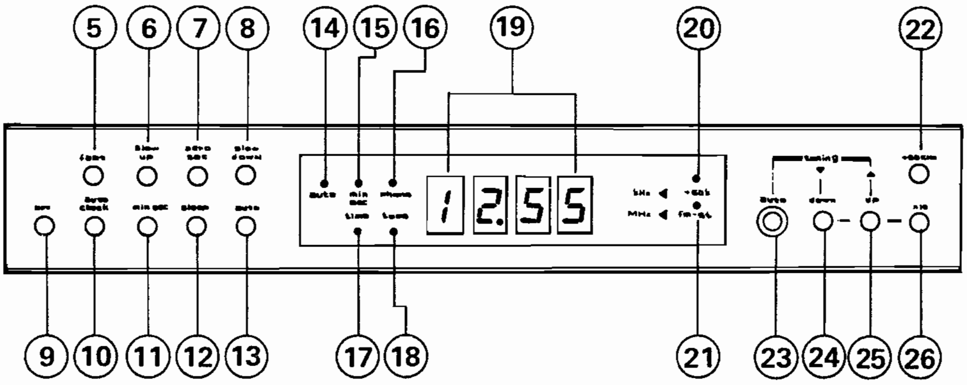


Figure 2.

1. FRONT PANEL FACILITIES

① **power indicator lamp**

② **Dolby NR indicator lamp**

③ **recording indicator lamp**

④ **recording indicators** (left/right)
These LED lamps indicate the recording levels adjusted by the recording level controls ㉜ . The 3 green LEDs indicate levels up to 0 dB, while the 2 red LEDs indicate levels above 0 dB (i.e. "peak levels").

Time Adjustment Push-buttons

⑤ **fast**
When pressed together with the off ⑨ or auto ⑬ push-buttons, the time display will advance rapidly. Normally used to speed up time adjustments and auto timer settings.

⑥ **slow up**
When this button is pressed together with the off ⑨ or auto ⑬ push-buttons, the time display advances much more slowly to permit accurate time adjustments and timer settings.

⑦ **zero sec**
The time display is adjusted to exactly 00 seconds by pressing this push-button. Note that this adjustment can still be made even if the seconds are not displayed (i.e. min sec button ⑪ not pressed).

⑧ **slow down**
Like the slow up button ⑥ this push-button is pressed together with the off ⑨ or auto ⑬ buttons. In this case, however, the time display is changed slowly in reverse. Normally used in case of overshooting the desired time.

⑨ **off**
Used for time adjustments and sleep time cancellation.

⑩ **auto check**
Used for rapid check of radio frequency, or other program source. When the button is pressed, the tuned frequency (of the selected radio band) is displayed for approx. 5 seconds, followed by a 5 second display (also approx.) of the time set by the auto timer (auto ⑬ button), after which the present time is put back on display.

⑪ **min sec**
By pressing this push-button, the time display is switched to minutes and seconds. To return to the normal hours and minutes display, push the off ⑨ button.

⑫ **sleep**
Push this button to set the desired length of time that the SM-4750 will remain on. For example, if the display figure 32 is set, the SM-4750 will remain on for another 32 minutes before turning off automatically.

⑬ **auto**
For setting of the auto timer for automatic switch-on of the SM-4750.

Digital Clock Mode Indicator Lamps

⑭ **auto LED**
Lights up once the auto timer is set.

⑮ **min sec LED**
Lights up when time display is changed to minutes and seconds.

⑯ **phono LED**
Lights up when the auto check ⑩ button is pressed while using the turntable (phono function button pressed).

⑰ **time LED**
Lights up when the present time is being displayed.

⑱ **tape LED**
Lights up when the auto check ⑩ button is pressed while using the tape deck (tape function button pressed).

⑲ **digital frequency and time display**
The tuned frequency in all 4 bands (LW/MW/SW/FM) , and time are displayed here in digital form.

⑳ **+50 kHz indicator lamp**
Lights up when the +50 kHz button ㉒ is pressed to shift the tuned FM frequency by +50 kHz (fine tuning).

㉑ **fm stereo indicator lamp**
Lights up when an FM stereo station has been tuned.

㉒ **+50 kHz push-button**
FM frequencies may be "fine-tuned" by pressing this button. +50 kHz is added to the displayed frequency.

㉓ **auto tuning**
For tuning in the FM and MW bands, press this button to "scan" the frequencies automatically. The scanning motion will stop once a broadcast station is tuned.

㉔ **manual down**
The frequency is changed (reduced) one step at a time every time this button is pressed. If the button remains depressed, the frequency will change continuously until the button is released again.

㉕ **manual up**
The frequency is likewise increased stepwise by this manual up button, the change being continuous if the button remains depressed.

㉖ **x10 push-button**
By pressing this button, and then either the manual up ㉕ or manual down ㉔ button immediately afterwards, the tuned frequency may be changed at the 10 digit rather than at the unit digit, thereby speeding up the tuning process, particularly in the MW band.

㉗ **memory indicator lamp**
This LED lamp lights up for approx 5 seconds only when the memory ㉙ button is pressed. Presetting of the desired station must be performed before this lamp goes out.

㉘ **preset indicator lamps** (1 – 8)
When setting a station into the memory, and when selecting that station at a later date, the LED indicator lamp corresponding to the pressed preset tuning ㉚ button will light up.

㉙ **memory push-button**
To store the frequency of any desired station in the memory, first press this button. The memory indicator lamp ㉗ directly above this button lights up to indicate that the memory is ready to accept the frequency, but note that this is a rather short period (approx 5 seconds).

㉚ **preset tuning buttons** (1 – 8)
Once the memory ㉙ button has been pressed, press one these buttons immediately afterwards to store the frequency of the desired station in the memory. To recall the frequency at a later date, simply press the corresponding tuning button.

㉛ **microphone jacks**
The tape deck recording input is switched automatically to the microphone input when microphones are plugged into these jacks.

㉜ **recording level controls** (left/right)

㉝ **tape selectors**

㉞ **Dolby NR switch**
Press the switch to record and play back Dolby* encoded tapes.

㉟ **bass control**

㊱ **treble control**

㊲ **balance control**

㊳ **volume control**

㊴ **play switch**
Pressing this switch will permit the turntable, tape deck and tuner sections to be used irrespective of timer settings (i.e. the SM-4750 will then be operated like a conventional music centre).

㊵ **speaker selectors** (A/B)
Two pairs of speaker systems may be connected to the SM-4750. Note, however, that if both selectors are pressed when only one pair of speaker systems has been connected, no sound will be delivered.

㊶ **headphone jack**
For private listening or monitoring, plug in a pair of headphones to this jack (and switch off both pairs of speaker systems).

㊷ **tape monitor**
For use when an external tape deck is connected.

㊸ **function selector buttons**
Select desired program source by pressing the appropriate selector button.

phono:	for turntable.
tape:	for the built-in cassette tape deck.
radio:	for any of the 4 radio bands.

㊹ **radio band selector buttons**
To listen to any desired radio station, first press the radio function selector button, and then the appropriate radio band selector button.

㊺ **mode** (mono/stereo)
Excessive noise in an FM stereo broadcast may be reduced by switching over to "mono". Otherwise leave in the "stereo" position.

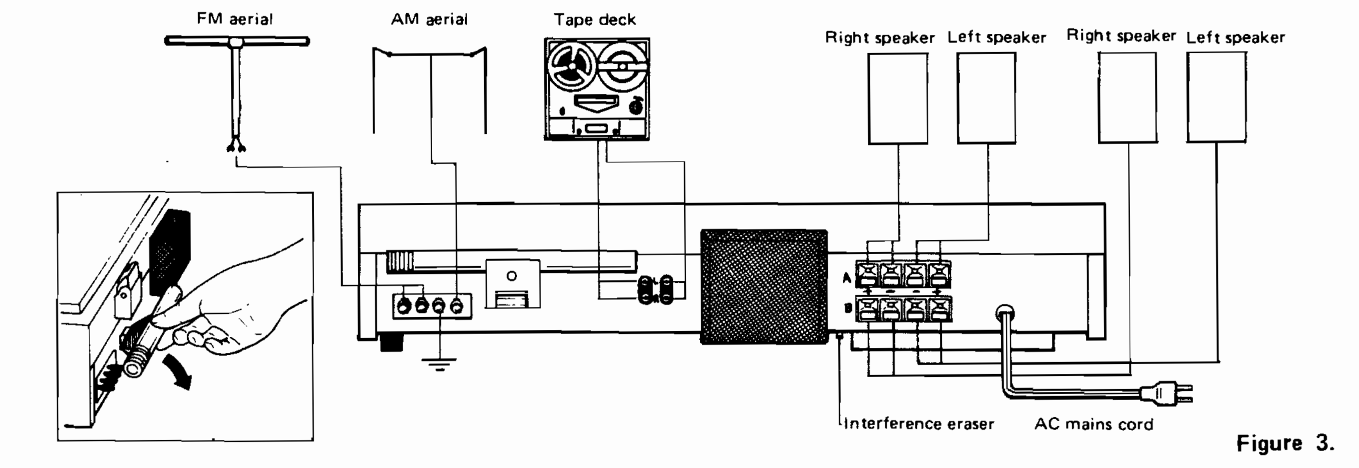


Figure 3.

2. ALL-OFF SWITCH OPERATION

When all-off switch ㊻ located in the top rear left hand corner is turned off, all power to every section of the SM-4750 is cut off. (See figure 3) When, however, it is left on (after all other switches have been turned off), power will still be supplied to the digital clock and memory circuits. If the all-off switch is turned off (or there is a prolonged power failure) for more than about one day, memory contents will be lost, and will have to be reset.

3. DIGITAL CLOCK OPERATION

When all-off switch ㊻ is first turned on, 3 decimal points will appear in the display. Press the off time adjustment button ⑨ to change the display to 0.00, which means that the digital clock and frequency display is ready for use.

■ Time Adjustments

(a) Clock (present time)

(1) First press the fast ⑤ and off ⑨ buttons simultaneously. The display time will advance rapidly.

(2) Release the two buttons once the present time is approached, and press the slow up ⑥ and off ⑨ buttons together to advance more slowly. Release the buttons as soon as the exact time is reached.

(3) If the correct time is over shot, press the slow down ⑧ and off ⑨ buttons to reverse the display time, releasing the buttons when the exact time is reached.

(4) To adjust the time precisely to 00 seconds, press the min sec button ⑪ (thereby switching the hour/minute display to a minute/second display). Then press the zero sec button ⑦ to zero the seconds display, releasing it again when the correct time is announced by radio, or shown by another clock.
Note that this adjustment may also be made without pressing the min sec button ⑪.

(b) Timer (preset time for automatic start)

(1) In this case, press the fast button ⑤ together with the auto button ⑬. The display time will again advance rapidly. Release the buttons when the desired time is approached.

(2) Next press the slow up ⑥ and auto ⑬ buttons together until the desired time is reached.

(3) The display time may again be reversed if necessary by pressing the slow down ⑧ and auto ⑬ buttons.

■ Timer Operations

(a) Preset automatic start

(1) First select the desired program source.
(Refer to the Full Auto Operation, page 5).

(2) Then preset the timer as described above.

(3) When preset time is reached, the selected program source will start automatically.

(4) The program source is turned off again automatically 59 minutes later.

(5) As long as the preset time is not cancelled, automatic start will be repeated at the same time on the following day, and is thus ideal for morning alarms or daily news reports.

(b) Automatic switch off

(1) When the sleep button ⑫ is pressed, the number "59" is displayed. If this button is released again immediately, the program source will be turned off automatically 59 minutes later.

(2) If the button remains depressed, the display number will decrease progressively until 00 is finally reached. To set the switch off time (sleep time) to, say 45 minutes, simply release the button when the display has decreased to 45.

Note 1. To switch the program off before the preset time is reached, simply switch off the off button ⑨.

Note 2. To continue listening to the program source after the preset time, press the play switch ㊴.

Note 3. The sleep time may be cancelled by pressing the off button ⑨. If pressed again, the auto start time will also be cancelled. However, if the min sec button ⑪ has already been turned on (as indicated by the min sec lamp ⑮ the off button will first release the min sec button. The sleep time and auto start will thus be cancelled by pressing the off button a second and third time respectively.

■ Auto Check Operation

A major feautre of this digital clock is the built-in micro-computer programmed for automatic checking. When the auto check button ⑩ is pressed, the tuned radio frequency (of the selected radio band) is initially displayed for approximately 5 seconds. If, on the other hand, the turntable or tape deck is being used, the phono ⑯ or tape ⑱ indicator lamps will light up instead (also for about 5 seconds). Next the auto start time preset in the timer is displayed (again for about 5 seconds), the display finally returning to the present time. All this information is supplied automatically by simply pressing a single button (the auto check button).

4. TUNER OPERATION

First press the radio function selector button ㊸ and the desired radio band selector button ㊹.

■ Automatic Tuning

(1) If the present time is shown in the display, press the auto tuning button ㉓ and either the manual down button ㉔ or manual up button ㉕. This will change the display to the presently received frequency.

(2) For FM or MW radio stations, press the auto tuning button ㉓. The displayed frequency will shift automatically, and stop when the frequency of the next station is tuned.

Note 1. If the next station is a rather weak (remote) station, the frequency display will not stop, but proceed to the next sufficiently strong station. Weaker stations must be tuned manually (see below).

Note 2. Automatic tuning does not operate in the LW or SW bands.

(3) To proceed to another station, simply press the auto tuning button ㉓ again.

- **Manual Tuning**

(1) Press the manual down ㉔ or manual up ㉕ button, and keep it depressed to shift the displayed frequency towards the desired station frequency. When close to the desired frequency, release the button, and then press again in single steps to tune into the frequency.

(2) When the x10 button ㉖ is pressed with the manual down or manual up buttons, the displayed frequency will shift in steps of tens rather than units (i.e. shift speed increased by 10). This is particularly useful in speeding up tuning operations in the MW band.

- **Preset Tuning**

Another major feature of the SM-4750 is the PLL synthesizer tuner section, and the capacity to memorize 8 separate stations in each of the 4 bands (i.e. a total of 32 stations). Once a station is preset in the memory, it may be tuned accurately and immediately whenever desired by a single push-button operation.

(1) First check the official broadcasting frequencies of the desired stations (up to 8 stations in each band), or else simply tune directly to the stations as described above by automatic or manual tuning.

(2) After confirming that the station is accurately tuned, press the memory push-button ㉙. The memory indicator lamp ㉗ above it will light up (for approximate 5 seconds) to indicate that the memory is ready to store the frequency.

(3) Immediately press one of the preset tuning buttons ㉚ while the memory indicator lamp is still on. If it goes out before the desired preset tuning button can be pressed, simply press the memory button again.

(4) Repeat the above process for all other stations to be stored in the memory (maximum of 8 stations per band).

(5) Any of these preset stations may then be tuned in again at any later date by simply pressing the relevant memory button (with the radio function selector and desired radio band selector buttons switched on).

Note 1: If the all-off switch ㊻ is turned off (or if there is a prolonged power failure) for more than about one day, memory contents will be lost. In this case the preset tuning operations will have to be repeated.

Note 2: In strong signal areas, MW auto-tuning may result in slight detuning (by 9 kHz). In such cases, use manual tuning.

5. TURNTABLE OPERATION

- **Auto-Start Position Adjustment**

(1) When stylus lands too close to the outer edge of the record:
Turn the auto-start adjustment screw in the counter clockwise direction.

(2) When stylus lands inside the first track:
Turn the auto-start adjustment screw in the clockwise direction.

- **Auto-Return Position Adjustment**

(1) When the tone arm returns to the arm rest before the end of the record:
Turn the auto return adjustment screw in the counter clockwise direction.

(2) When the tone arm fails to return to the arm rest after the stylus has entered the lead-out groove:
Turn the auto return adjustment screw in the clockwise direction.

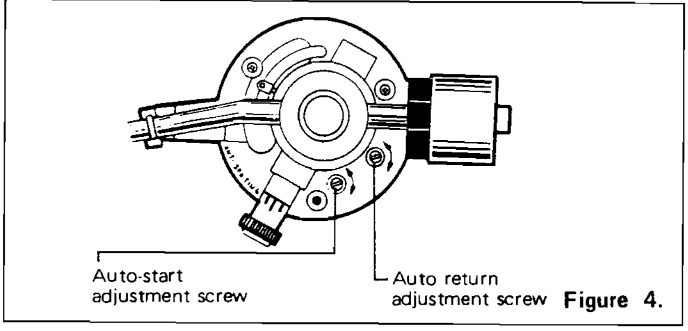


Figure 4.

Caution: The start lever and auto repeat knob must not be changed when the tone arm is in motion during auto start and auto return operations.

6. FULL-AUTO OPERATION

The SM-4750 offers fully automatic operation. To listen to the program source you want, when you want, follow instructions.

(1) Set the automatic start time.

(2) Make sure the play switch is in the OFF mode.

(3) Perform the following operations for the desired source:

(a) For record listening:
Put the function button to phono and release the arm rest lock. While pushing the turntable's start lever down in the play direction, rotate the platter 1/8 of a turn by hand (if you fail to do this, the turntable may not operate automatically at the chosen time.) Finally, set a record on the platter. At the set time play will begin automatically.

(b) For radio lsitening:
Select a radio station according to the tuner operation section, previously described.

(c) For tape listening:
Place a tape in the cassette deck and set the function button to tape. Then press the tape deck play button.

(d) For recording while away:
Set the tuner or player and place a tape in the tape deck. Then simultaneously press the play and rec buttons. With this, recording of the selected source will take place at the desired time while you are away from home.

Caution:

* In the sleep and auto modes, if the length of the record is longer than the set operating time, the tone arm will be left on the record surface when the end of the time set beforehand is reached. When this occurs, be sure to quickly return the tone arm to the arm rest.

* If the sleep time setting is shorter than the length of the cassette tape, the deck will stop at that point on the tape when the end of the set time is reached.

7. ASSEMBLY AND SETTING UP PROCEDURE

Caution:

- For protection against damage when shipping or otherwise transporting the set, please return the transit screws to their original position and retighten. Use rubber bands to hold the tone arm in place. Remove the counter weight together with the turntable platter and mat and pack separately.

■ Adjusting Tracking Force and Anti-Skating Control

(Note: This adjustment is important. Refer to Figure 5)

(1) First remove the stylus cover. Refer to Figure 6.
(2) Check that the cue lever is in the down position, and that the tone arm itself is free to move from the arm rest.
(3) Set the anti-skating mechanism to "0".
(4) Rotate the counter weight clockwise or counterclockwise until the tone arm is equally balanced. Set the tracking force scale to "0" (without moving the counter weight).
(5) Rotate the counter weight so that the dial reads "1.75".
(6) Set the anti-skating mechanism to "1.75".

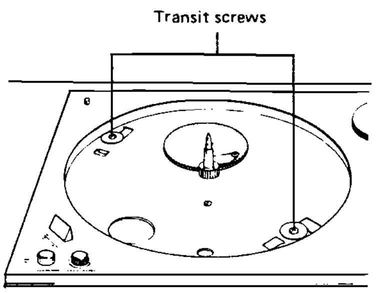

Transit screws

Figure 5.

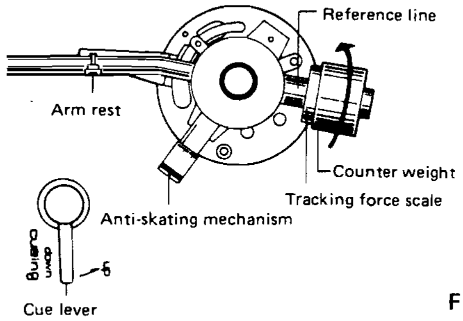

Reference line
Arm rest
Counter weight
Tracking force scale
Anti-skating mechanism
Cue lever

Figure 6.

8. OPERATING CONTROLS

TOP VIEW

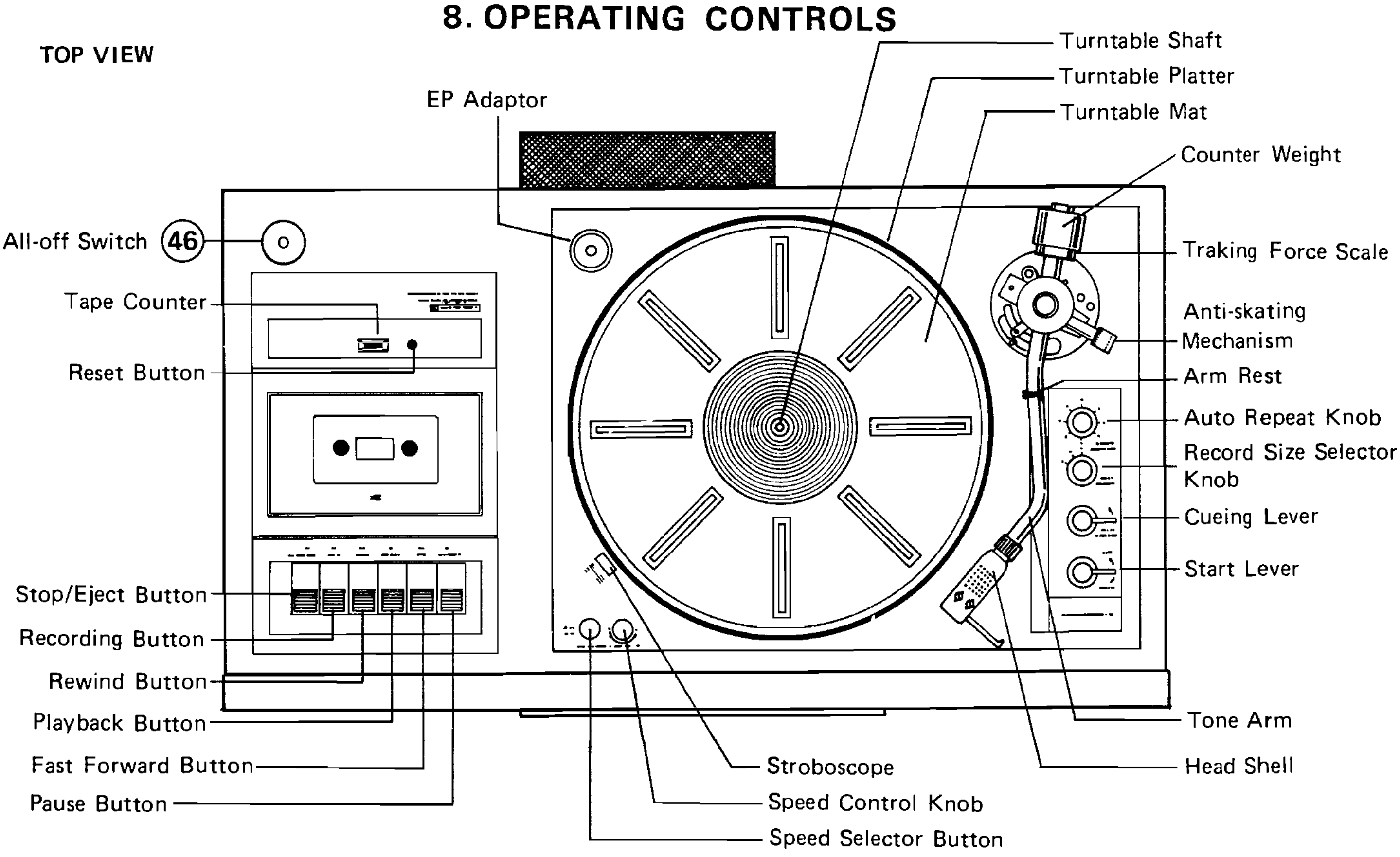
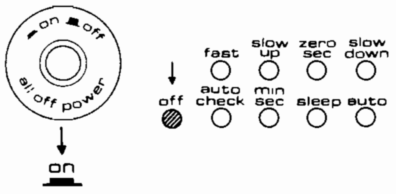
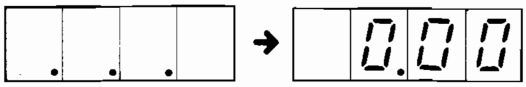

EP Adaptor
Turntable Shaft
Turntable Platter
Turntable Mat
Counter Weight
All-off Switch
46
Tape Counter
Reset Button
Traking Force Scale
Anti-skating Mechanism
Arm Rest
Auto Repeat Knob
Record Size Selector Knob
Cueing Lever
Start Lever
Stop/Eject Button
Recording Button
Rewind Button
Playback Button
Fast Forward Button
Pause Button
Tone Arm
Head Shell
Stroboscope
Speed Control Knob
Speed Selector Button

Figure 7.

9. PUSH BUTTON OPERATIONS

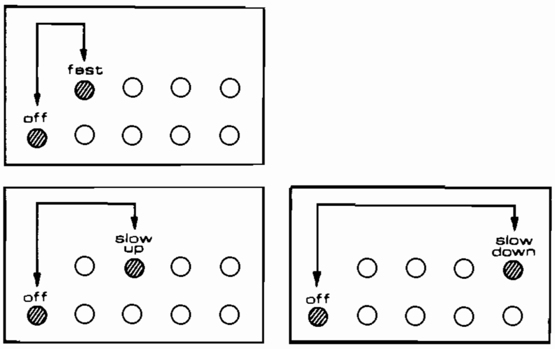
The Very First Step


on
off
all off power
on
off
fast
slow up
zero sec
slow down
auto check
min sec
sleep
auto

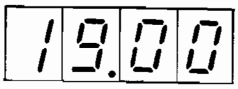


1

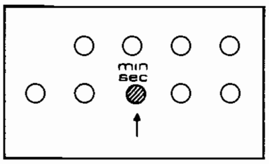
Setting present time


fast
off
slow up
off
slow down
off

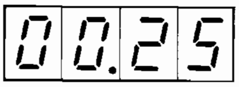
Present time (19:00)



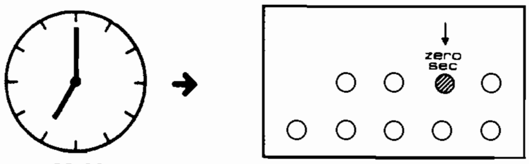
Check minute/second display



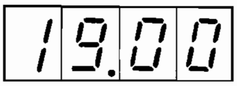
19:00:25 →



Setting to 00 seconds

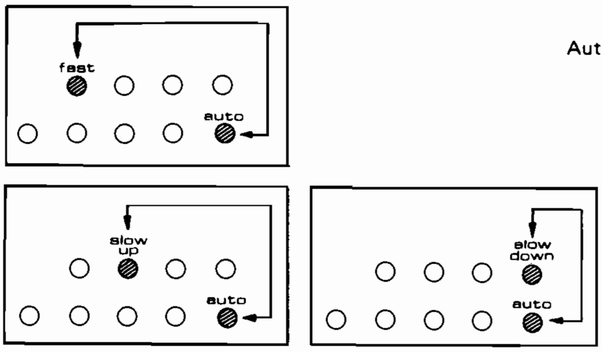


19:00:00

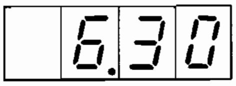


2

Timer Setting

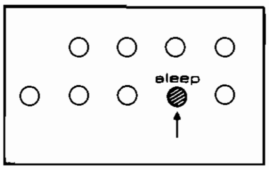

fast
auto
slow up
auto
slow down
auto

Automatic start time (6:30)

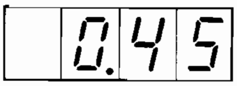


3

Automatic switch off

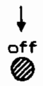


Automatic switch off after 45 minutes



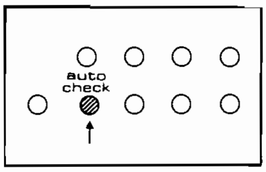
☆

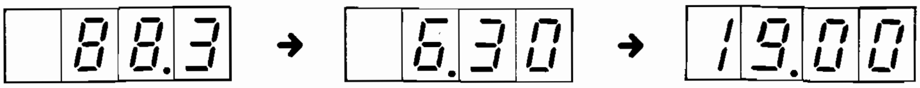
Cancellation



4

Automatic check




88.3
6.30
19.00

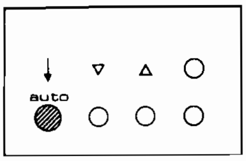
Frequency (FM 88.3 MHz)

Timer (6:30)

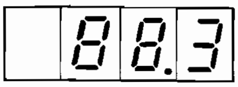
Clock (19:00)

5

Automatic tuning



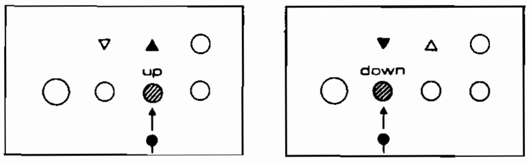
Auto scan

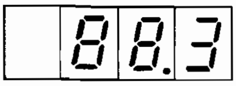


(FM 88.3 MHz)

6

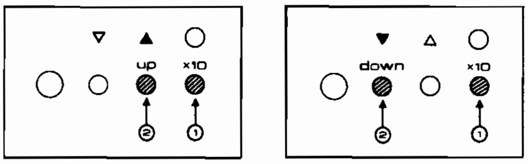
Manual tuning

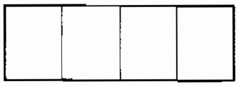




7

Fast tuning (x10 speed)

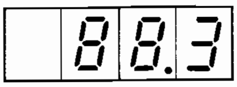

up
x10
②
①
down
x10
②
①



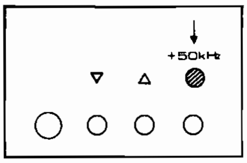
Tuning speed increased by 10

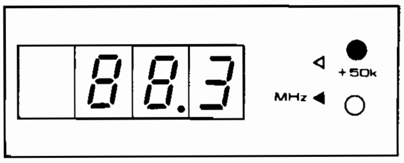
8

Fine tuning



(FM 88.3 MHz)

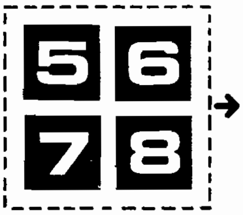




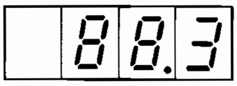
(FM 88.35 MHz)

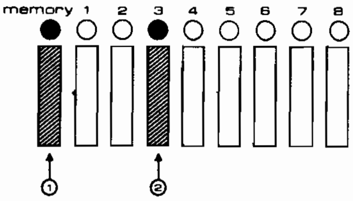
9

Preset tuning



Tuning




memory
1
2
3
4
5
6
7
8
①
②

Memory → 3ch. (FM 88.3 MHz)

10. DISASSEMBLY INSTRUCTIONS

CASSETTE RECORDER PANEL REMOVAL

1. Remove 2 screws Ⓐ. See figure 8.
2. Separate the Cassette Recorder Panel from the Cabinet.

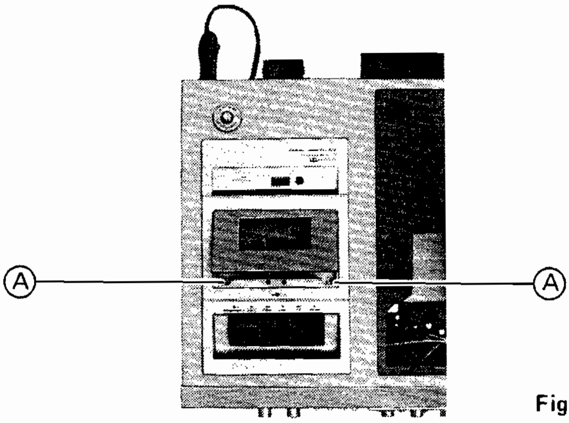


Figure 8.

CABINET REMOVAL

1. Remove 4 screws Ⓑ. See figure 9.
2. Separate the Cabinet from the Chassis.

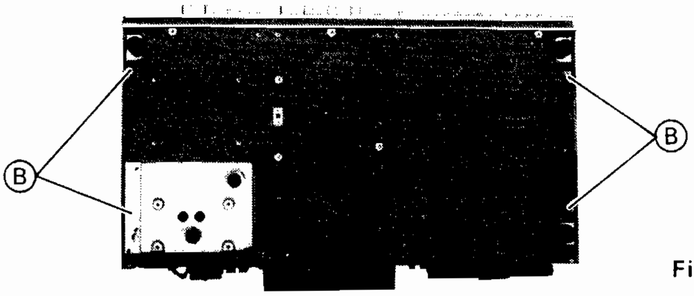


Figure 9.

BOTTOM BOARD REMOVAL

1. Remove 7 screws Ⓒ. See figure 10.
2. Separate the Bottom Board from the Chassis.

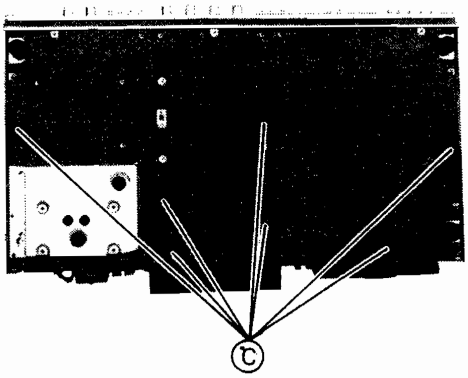


Figure 10.

FRONT PANEL REMOVAL (WITH DISPLAY AND LEVEL P.C. BOARD)

1. Remove Cabinet.
2. Remove 6 Knobs Ⓓ. See figure 11.
3. Remove 2 screws Ⓔ. See figure 11.
4. Remove 3 screws Ⓕ. See figure 12.
5. Separate the Front Panel from the Chassis.

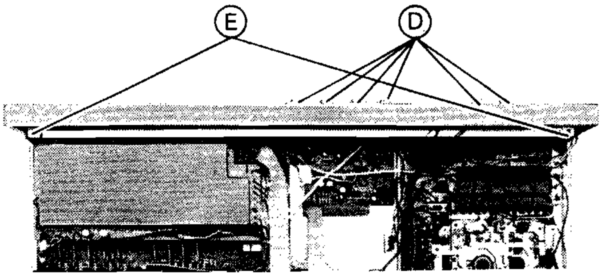


Figure 11.

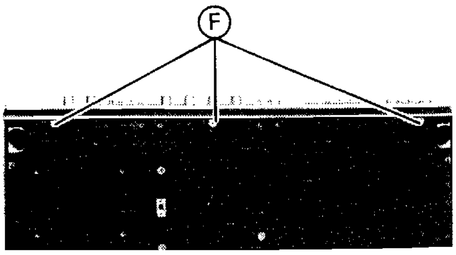


Figure 12.

DISPLAY P.C. BOARD REMOVAL

1. Remove Cabinet.
2. Remove Front Panel.
3. Put on the Front Panel on the set Ⓖ. See figure 13.
4. Remove 5 screws Ⓗ. See figure 13.

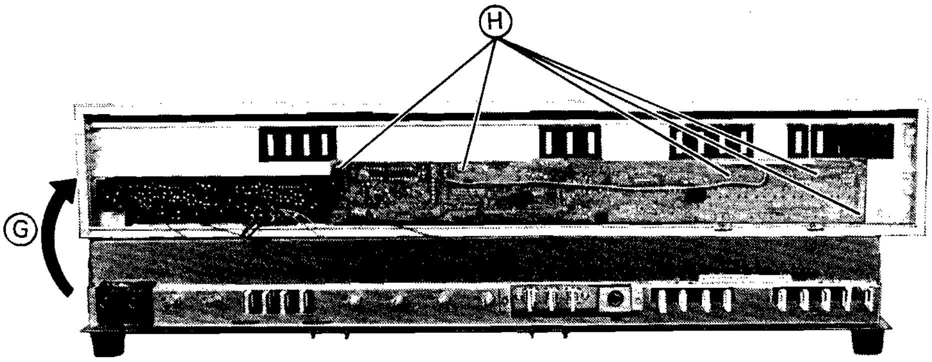


Figure 13.

Insert the portion with plug (30P) of the Display P.C. Board into the Synthesizer P.C. Board after removing the Display P.C. Board. This will allow easy inspection of Display P.C. Board.

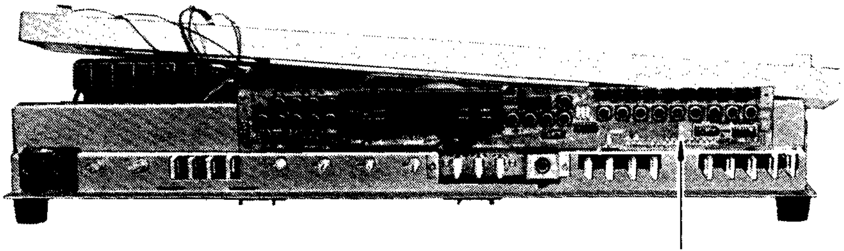


Figure 14.

MECHANISM REMOVAL

1. Remove 4 screws Ⓘ. See figure 15.
2. Remove 4 screws Ⓙ. See figure 16.
3. Separate the Mechanism from the P.C. Board.

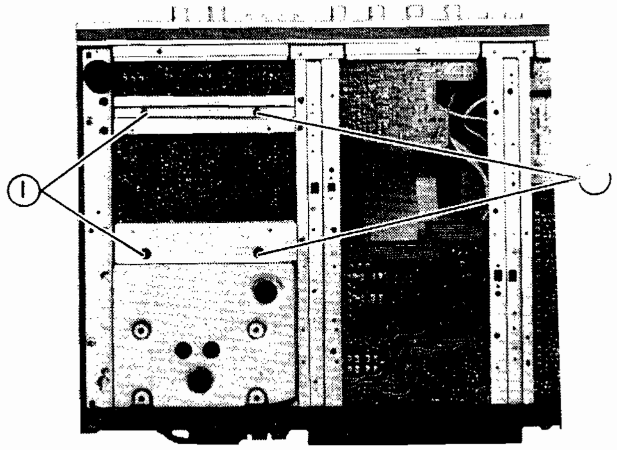


Figure 15.

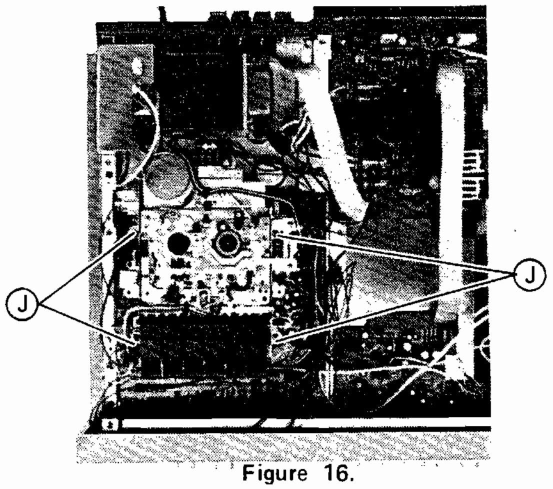


Figure 16.

PARTS LOCATION

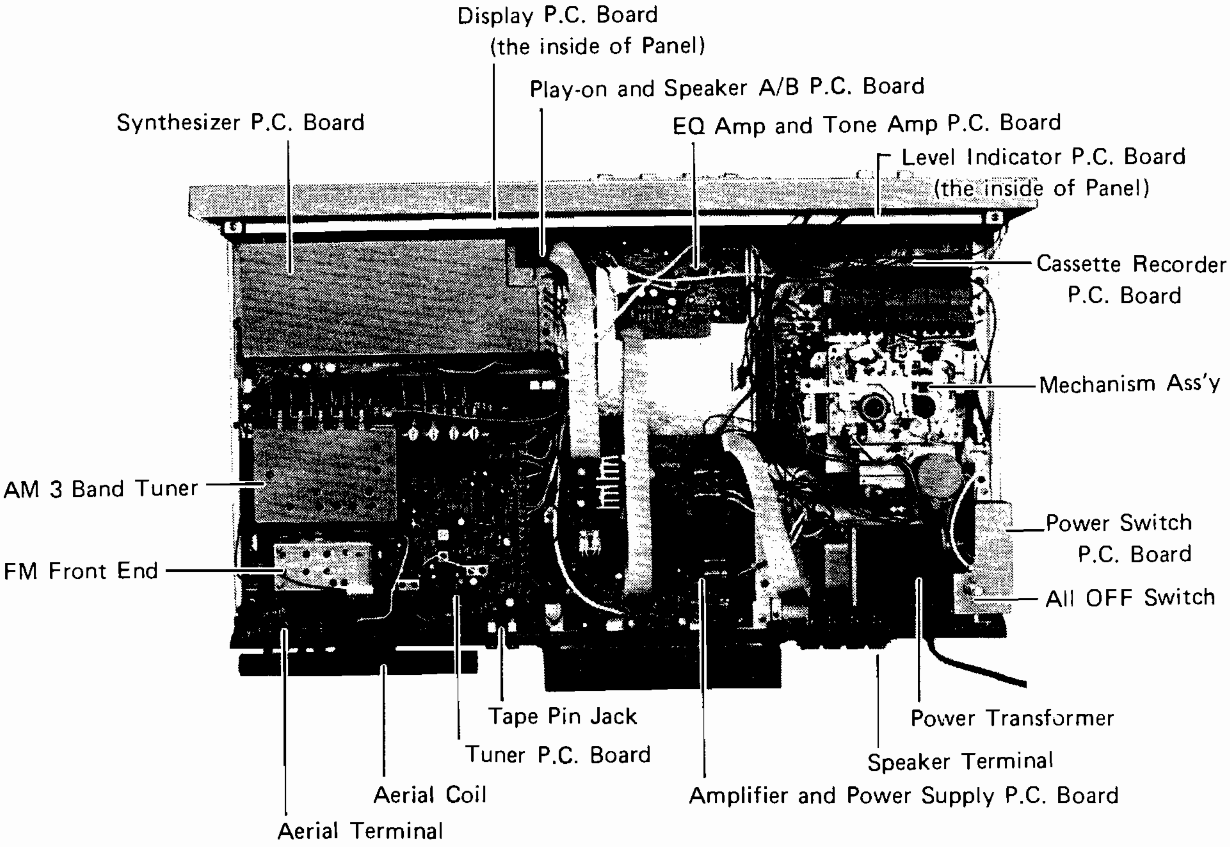

Display P.C. Board (the inside of Panel)
Play-on and Speaker A/B P.C. Board
Synthesizer P.C. Board
EQ Amp and Tone Amp P.C. Board
Level Indicator P.C. Board (the inside of Panel)
Cassette Recorder P.C. Board
Mechanism Ass'y
AM 3 Band Tuner
FM Front End
Power Switch P.C. Board
All OFF Switch
Tape Pin Jack
Power Transformer
Tuner P.C. Board
Speaker Terminal
Aerial Coil
Amplifier and Power Supply P.C. Board
Aerial Terminal

Figure 17.

11. BLOCK DIAGRAM

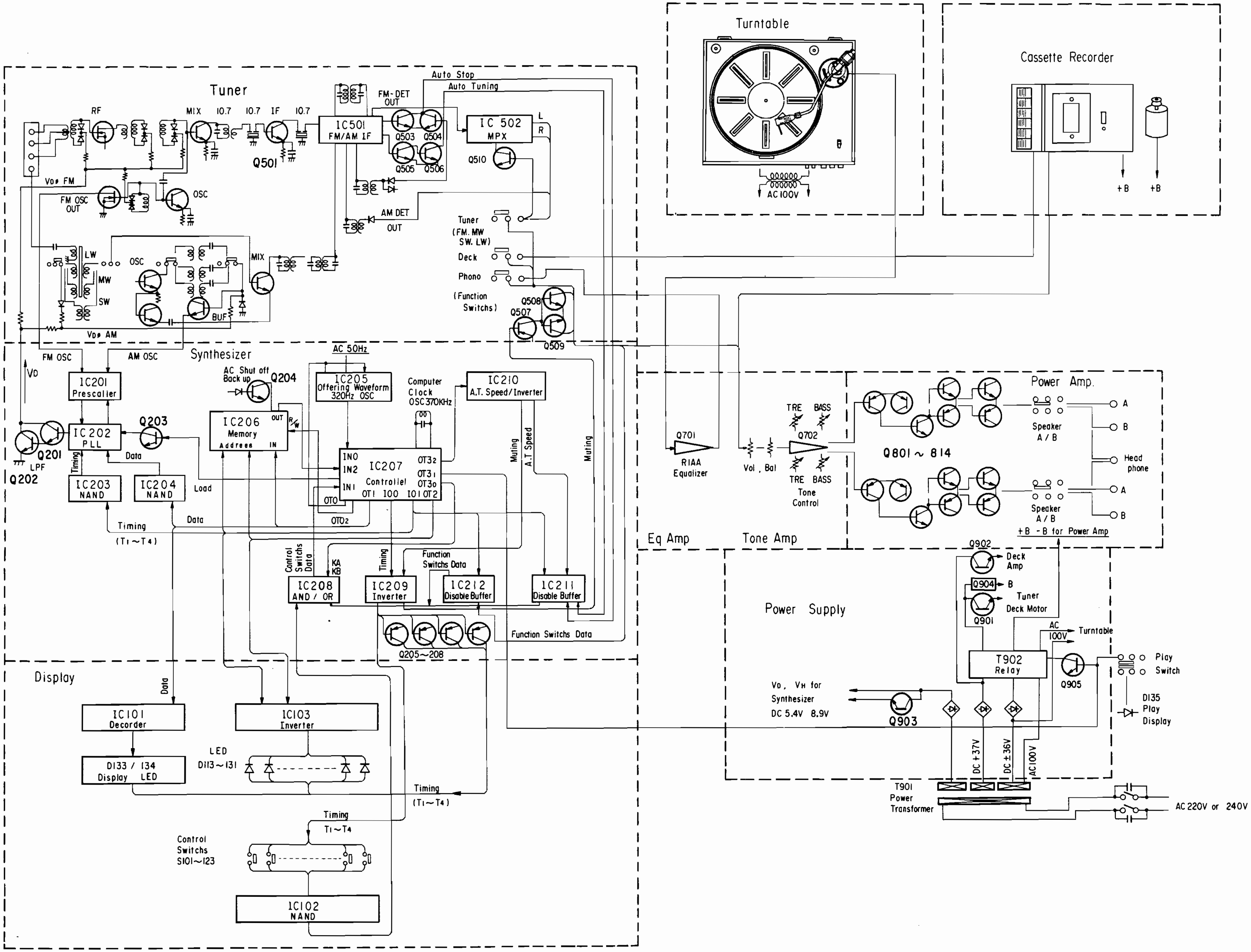

Turntable
AC 100V
Cassette Recorder
+B
+B
Tuner
RF
MIX
10.7
10.7
IF
10.7
Q501
IC501
FM/AM IF
FM-DET OUT
Auto Stop
Auto Tuning
Q503
Q504
Q505
Q506
IC 502
MPX
L
R
Q510
Vo FM
FM OSC OUT
OSC
AM DET OUT
Tuner (FM. MW SW. LW)
Deck
Phono
(Function Switchs)
Q508
Q507
Q509
LW
MW
SW
OSC
MIX
BUF
Vo AM
FM OSC
AM OSC
Synthesizer
AC 50Hz
AC Shut off Back up
Q204
IC205
Offering Waveform 320Hz OSC
Computer Clock OSC 370KHz
IC210
A.T. Speed/Inverter
IC201
Prescaller
VD
IC202
PLL
Q203
IC206
Memory
Address
OUT
R/W
IN
Q201
Q202
LPF
Timing
Data
IC203
NAND
IC204
NAND
Load
INO
IN2
IN1
IC207
Controller
OT0
OT1 100 101 OT2
OT32
OT31
OT30
OT02
Muting
A.T Speed
Muting
Timing (T1~T4)
Data
Control Switchs Data
KA
KB
Timing
Function Switchs Data
IC208
AND / OR
IC209
Inverter
IC212
Disable Buffer
IC211
Disable Buffer
Q205~208
Function Switchs Data
Display
Data
IC101
Decorder
IC103
Inverter
D133 / 134
Display LED
LED
D113~131
Timing
(T1~T4)
Timing
T1~T4
Control Switchs
S101~123
IC102
NAND
Q701
RIAA Equalizer
Vol, Bal
TRE
BASS
Q702
TRE
BASS
Tone Control
Eq Amp
Tone Amp
Power Amp.
Q801 ~ 814
Speaker A / B
A
B
Head phone
Speaker A / B
A
B
+B -B for Power Amp
Q902
Deck Amp
Q904
B
Tuner
Deck Motor
Q901
Power Supply
AC 100V
Turntable
T902
Relay
Q905
Play Switch
D135
Play Display
Vo, VH for Synthesizer
DC 5.4V 8.9V
Q903
DC +37V
DC ±36V
AC100V
T901 Power Transformer
AC 220V or 240V

Figure 18.

12. ADJUSTMENTS

12-1 TUNER SECTION

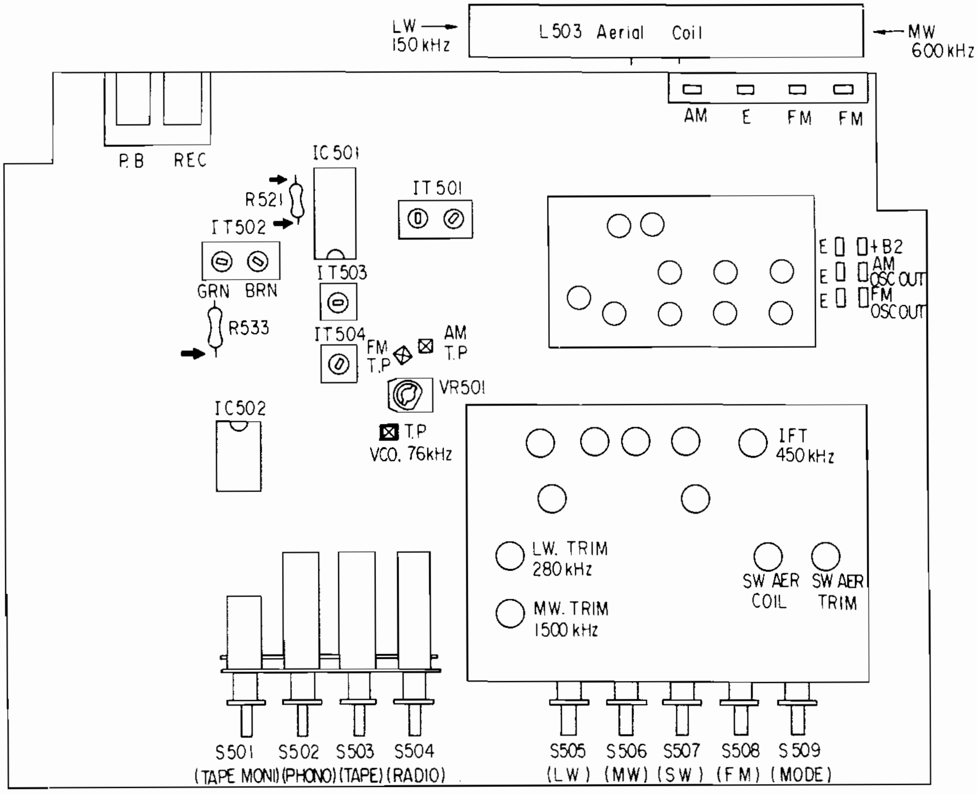

LW 150 kHz
L503 Aerial Coil
MW 600 kHz
AM
E
FM
FM
P.B
REC
IC501
R521
IT502
GRN
BRN
R533
IT501
IT503
IT504
FM T.P
AM T.P
VR501
IC502
T.P VCO. 76kHz
E
+B2
AM OSC OUT
FM OSC OUT
IFT 450 kHz
LW. TRIM 280 kHz
MW. TRIM 1500 kHz
SW AER COIL
SW AER TRIM
S501 (TAPE MONI)
S502 (PHONO)
S503 (TAPE)
S504 (RADIO)
S505 (LW)
S506 (MW)
S507 (SW)
S508 (FM)
S509 (MODE)

Figure 19. Top View of Tuner P.C. Board

AM ADJUSTMENT

Test equipments/Tools required

1. Signal generator (with frequency countor)
2. Sweep generator
3. Test loop Aerial
4. Adjusting screwdriver
5. Oscilloscope
6. Dummy load resister

IF ADJUSTMENT/STOP SIGNAL ADJUSTMENT

Step	Adjustment	Remark
IF Response	IT504	Pluck out core to the full.
	IT501 IT503	Adjust for scope pattern with specified marker (450 kHz) as illustrated in Fig.ⓐ
	TT504	Adjust for scope pattern with specified marker (450 kHz) as illustrated in Fig.ⓑ

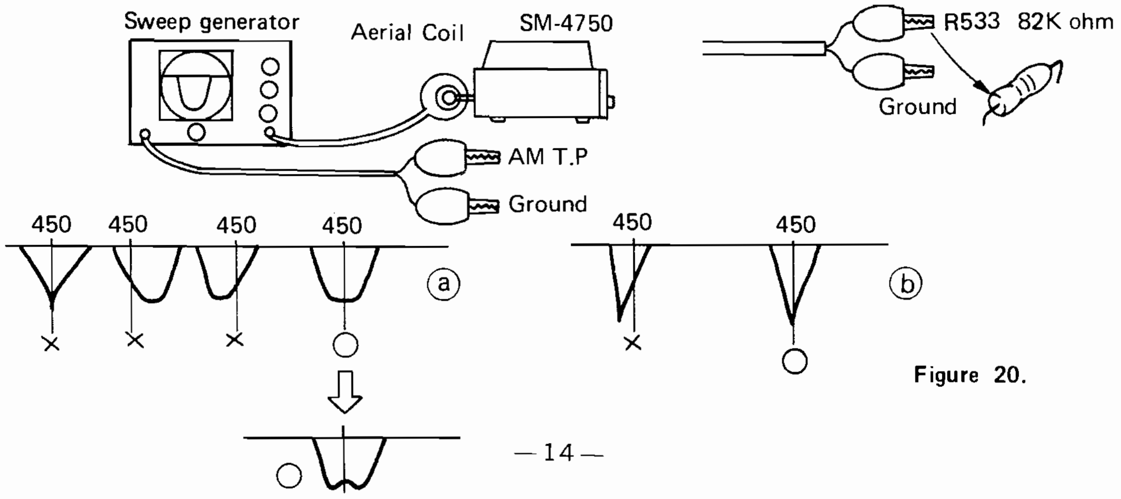

Sweep generator
Aerial Coil
SM-4750
R533 82K ohm
Ground
AM T.P
Ground
450
450
450
450
×
×
×
○
○
ⓐ
450
450
×
○
ⓑ

Figure 20.

■ LW ADJUSTMENT

1. Set Function switch to LW.
2. Set signal generator frequency as listed in TABLE 1 LW ADJUSTMENT CHART.
3. Proceed as outlined in the TABLE 1 LW ADJUSTMENT CHART.

TABLE 1 LW ADJUSTMENT CAHRT (See Figure 21.)

Step	Signal Generator Connection	Signal Generator Frequency	Display Frequency	Connection	Adjustment	Remarks
1	Test loop	150 kHz	150 kHz	VTVM across Speaker terminal	L503 (LW) LEFT SIDE	Adjust for Maximum
2	Test loop	280 kHz	280 kHz	VTVM across Speaker terminal	LW Aer Trim	Adjust for Maximum
3	Repeat steps 1 and 2 until no further improvement is noticed.					

■ MW ADJUSTMENT

1. Set Function switch to MW.
2. Set signal generator frequency as listed in TABLE 2 MW ADJUSTMENT CHART.
3. Proceed as outlined in the TABLE 2 MW ADJUSTMENT CHART.

TABLE 2 MW ADJUSTMENT CHART (See Figure 21.)

Step	Signal Generator Connection	Signal Generator Frequency	Display Frequency	Connection	Adjustment	Remarks
1	Test loop	600 kHz	600 kHz	VTVM across Speaker terminal	L503 (MW) RIGHT SIDE	Adjust for Maximum
2	Test loop	1500 kHz	1500 kHz	VTVM across Speaker terminal	MW Aer Trim	Adjust for Maximum
3	Repeat steps 1 and 2 until no further improvement is noticed.					

■ SW ADJUSTMENT

1. Set Function switch to SW.
2. Set signal generator frequency as listed in TABLE 3 SW ADJUSTMENT CHART.
3. Proceed as outlined in the TABLE 3 SW ADJUSTMENT CHART.

TABLE 3 SW ADJUSTMENT CHART (See Figure 21.)

Step	Signal Generator Connection	Signal Generator Frequency	Display Frequency	Connection	Adjustment	Remarks
1	Dummy load AM Aerial Terminal	5.9 MHz	5.9 MHz	VTVM across Speaker	SW Aer Coil	Adjust for Maximum
2		6.3 MHz	6.3 MHz	VTVM across Speaker	SW Aer Trim	Adjust for Maximum
3	Repeat steps 1 and 2 until no further improvement is noticed.					

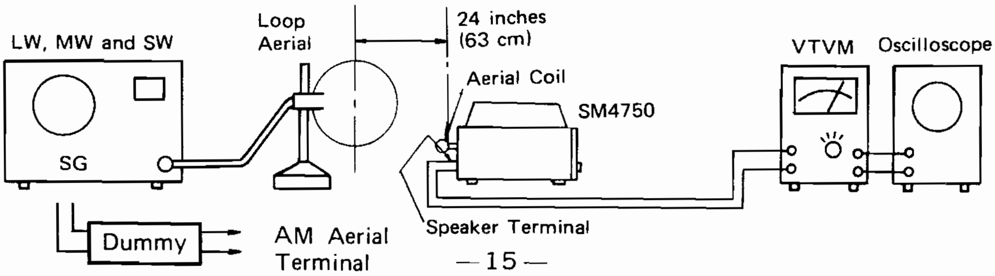


Figure 21.

- **FM IF ADJUSTMENT**

1. Set Function switch to FM.
2. Set signal generator frequency as listed in TABLE 4 FM IF ADJUSTMENT CHART.
3. Proceed as outlined in the TABLE 4 FM IF ADJUSTMENT CHART.

TABLE 4 FM-IF ADJUSTMENT CHART

Step	Signal Generator Connection	Signal Generator Frequency	Display Frequency	Meter or Oscilloscope Connection	Adjustment	Remarks
1	Connect FM signal generator to FM Aerial Terminal. Connect the modulator to signal generator.	98.000 MHz 66 dB	98 MHz	Connect Tester to Resistor R521	IT502 BRN	Adjust for R521 Voltage 0 V
2				VTVM across Speaker	IT502 GRN	Adjust for Minimum Distortion
3	Repeat steps 1 and 2.					

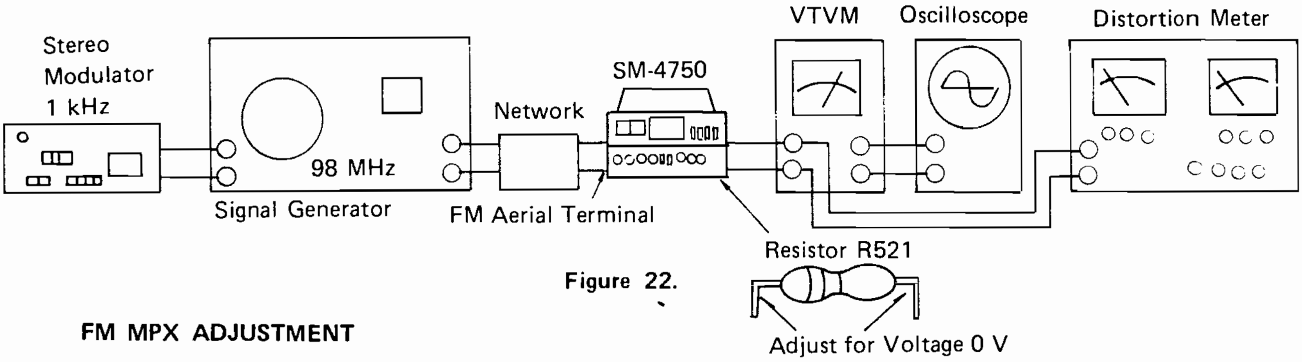

VTVM
Oscilloscope
Distortion Meter
Stereo Modulator 1 kHz
SM-4750
Network
98 MHz
Signal Generator
FM Aerial Terminal
Resistor R521
Adjust for Voltage 0 V

Figure 22.

FM MPX ADJUSTMENT

Free-running Frequency Adjustment	Connect a frequency to the Test Point (VCO) and Adjust the VR501 for 76 kHz reading counter with no-signal input.

12-2 AUDIO SECTION

IDLING ADJUSTMENT

Turn the semi-solid resistor VR801, VR802 fully to the arrow before turning the power switch ON. (idle current to zero). Turn the power switch on and after 60 seconds, connect VTVM between ⓐ and ⓑ as illustrated and adjust VR801, VR802 to obtain 12 mV.

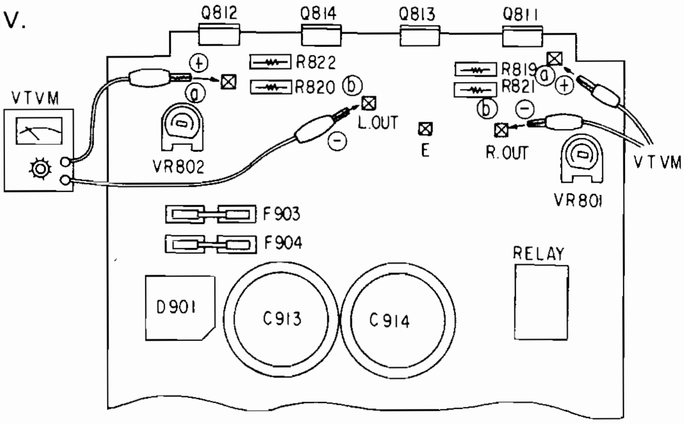
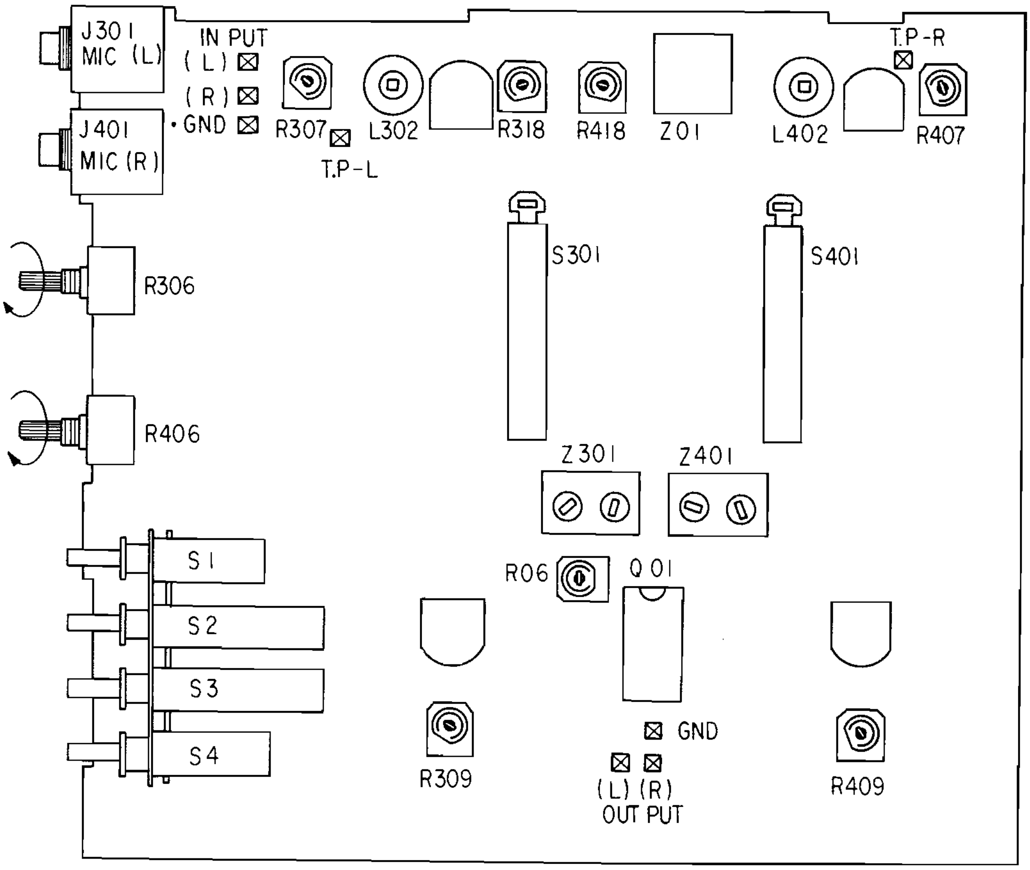

Q812
Q814
Q813
Q811
R822
R820
R819
R821
ⓐ
ⓑ
L.OUT
E
R.OUT
VTVM
VR802
VR801
F903
F904
RELAY
D901
C913
C914

Figure 23. Top View of Audio P.C. Board

12-3 CASSETTE RECORDER SECTION

- **ADJUSTING PARTS LOCATION**

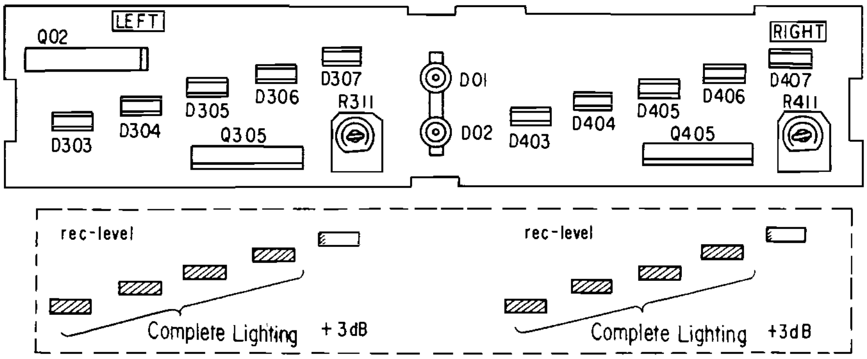


J301
MIC (L)
J401
MIC (R)
IN PUT
(L) ☒
(R) ☒
• GND ☒
R307
T.P-L
L302
R318
R418
Z01
L402
T.P-R
R407
S301
S401
R306
R406
Z301
Z401
S1
S2
S3
S4
R06
Q01
R309
☒ GND
☒ ☒
(L) (R)
OUT PUT
R409

Figure 24. Top View of Cassette Recorder P.C. Board

- **TEST EQUIPMENTS**

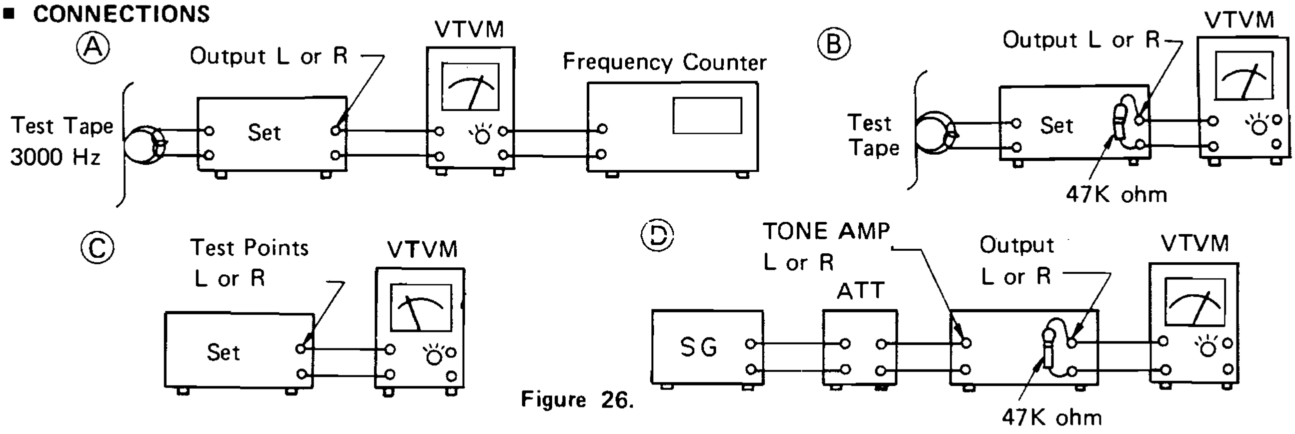
1. Signal Generator (SG)
2. Oscilloscope
3. Vacuum Tube Voltmeter (VTVM)
4. Resistance Attenuator (ATT)
5. Frequency Counter (FC)
6. Test Tapes
   MTT-111 (3 kHz)
   MTT-114 (10 kHz)
   MTT-150 (400 Hz)
   MTT-502 (Blank)



Q02
LEFT
RIGHT
D303
D304
D305
D306
D307
R311
Q305
D01
D02
D403
D404
D405
D406
D407
R411
Q405
rec-level
Complete Lighting
+3dB
rec-level
Complete Lighting
+3dB

Figure 25. Adjust the R311 and R411 so the diodes D307 and D407 light slightly when Playback level is + 3dB (D306 and D406 should be lit completely.)

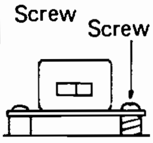
- **CONNECTIONS**



Ⓐ
Output L or R
VTVM
Frequency Counter
Test Tape
3000 Hz
Set
Ⓑ
Output L or R
VTVM
Test
Tape
Set
47K ohm
Ⓒ
Test Points
L or R
VTVM
Set
Ⓓ
TONE AMP
L or R
ATT
Output
L or R
VTVM
SG
47K ohm

Figure 26.

■ ADJUSTMENTS CHART (CASSETTE RECORDER)

Adjusting Item	Switch Position			Rec. Level Control	Adjusting Parts	Connection	Remarks
	Bias	Eq.	Dolby				
Tape Speed Adjustment	Nor.	Nor.	Out		Semi-fixed Variable Resistor in the Motor.	See Fig. 26-Ⓐ	1. Playback the Test Tape (MTT-111). 2. Adjust so the Frequency Counter indicates 3000 ±35 Hz.
Head Azimuth Adjustment	Nor.	Nor.	Out		Head Adjusting Screw  	See Fig. 26-Ⓑ	1. Playback the Test Tape (MTT-111). 2. Set to maximum reading of VTVM.
Playback Sensitivity Adjustment	Nor.	Nor.	Out		R307 (L) R407 (R)	See Fig. 26-Ⓑ	1. Playback the Test Tape (MTT-150) 2. Adjust so the VTVM indicates 775mV.
Bias Leak Adjustment	CrO_2	CrO_2	Out	Minimum	L302 (L) L403 (R)	See Fig. 26-Ⓒ	1. Set the Cassette Tape (Blank) on the Deck. 2. Set the Deck to recording mode. 3. Set to minimum reading of VTVM.
Level Diode Adjustment	Nor.	Nor.	Out		R311 (L) R411 (R)		1. Playback the Test Tape (MTT-150) 2. Adjust so the Level Diode indicates +3dB. (Figure 25)
Record/ Playback Sensitivity Adjustment	Nor.	Nor.	Out	Adjust so the Level Meter indicates +3dB.	R309 (L) R409 (R)	See Fig. 26-Ⓓ	1. Set the Test Tape (MTT-502) on the Deck. 2. SG Frequency – 333 Hz ATT ----- –15dB 3. Set the Deck to recording and playback mode. 4. Adjust so the Level Diode indicates +3dB.
Bias Current Adjustment	Nor.	Nor.	Out	Maximum	R318 (L) R418 (R)	See Fig. 26-Ⓓ	1. Set the Test Tape (MTT-502) on the Deck. 2. SG Frequency – 333 Hz/ 10 kHz ATT ----- –40dB 3. Set the Deck to recording and playback mode. 4. Adjust for Zero deviation between 333 Hz and 10 kHz.

12-4 TURNTABLE SECTION

Revolution Adjustment

(1) Short the terminals 6, 7, 8 and 9 and connect them to ground.

(2) Connect the ground side of digital voltmeter to the terminal 14. Connect other terminals as illustrated.

(3) Adjust VR04 when switch is in (a) side and adjust VR03 when switch is in (b) side. (Turn clockwise when output is negative and counterclockwise when output is positive.)

(4) Keep the output at ±5mV. Make certain that both outputs are ±5mV with the switch changing over alternately.

(5) Connect the lead wire of the motor as shown in table below and connect the 10K ohm VR1 as shown in Figure 27, adjusting the resistance to 5K ohm. Then mount the turntable on the motor and turn the power switch ON.

Adjust the revolution (33 1/3 r.p.m.) with VR01 and (45 r.p.m.) with VR02 watching the storoboscope.

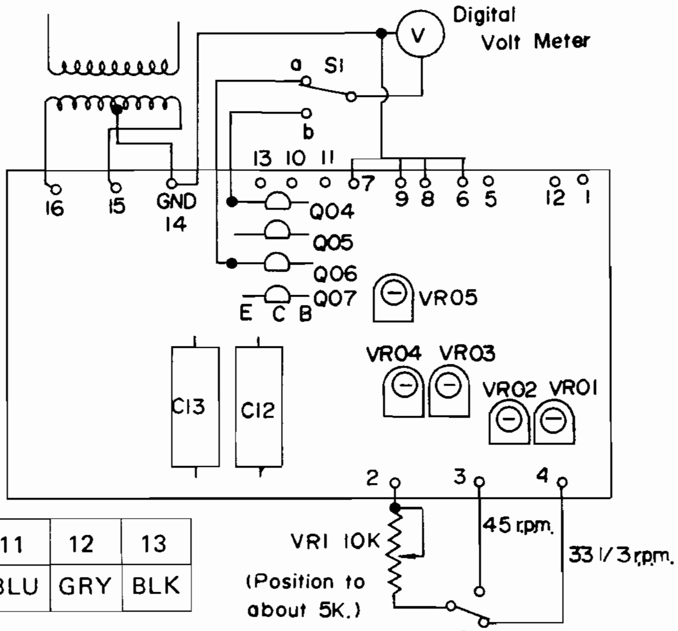

Digital
Volt Meter
V
a
S1
b
13 10 11
7
9 8 6 5
12 1
16
15
GND
14
Q04
Q05
Q06
Q07
E C B
VR05
VR04 VR03
VR02 VR01
C13
C12
2
3
4
VR1 10K
(Position to
about 5K.)
45 r.p.m.
33 1/3 r.p.m.
S2

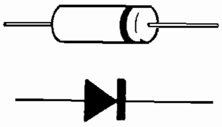
Figure 27.

P.C.B. Term. No.	1	5	6	7	8	9	10	11	12	13
Motor lead wire	WHT	VLT	YEL	BRN	PNK	ORG	RED	BLU	GRY	BLK

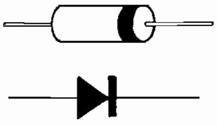
(6) Adjust the Vp-p of both phases with VR05 watching the output waveforms at emitters of Q04 and Q06.

Adjust the zero level of waveform at Q04 with VR03, the zero level of waveform at Q06 with VR04. Adjustments of Q05 and Q07 are the same as above.

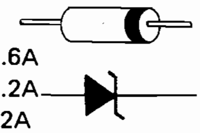
13. EXTERNAL APPEARANCE OF TRANSISTOR IC'S AND DIODES



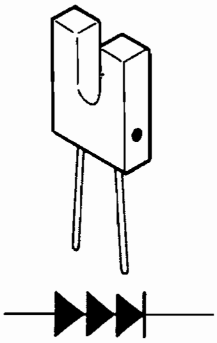
1N60



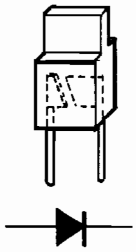
1S1553
1S1555
1S1885



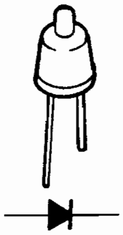
02Z5.6A
02Z8.2A
02Z12A
02Z13A
02Z15A
02Z18A



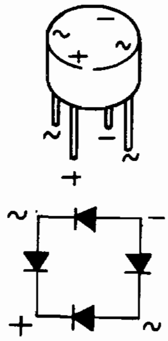
STV-3H



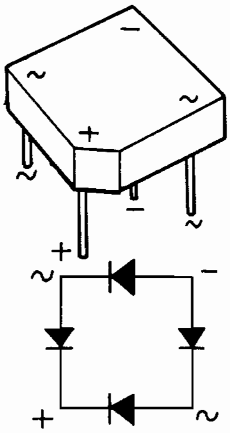
TLR-205



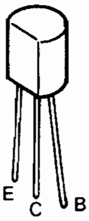
AR2433D



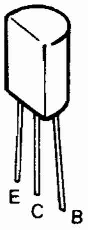
WL02M



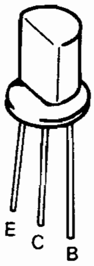
DS5BN-M



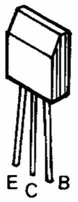
2SA1015
2SC733
2SC1815



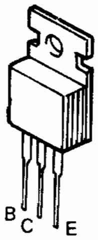
2SC1627
2SC2229



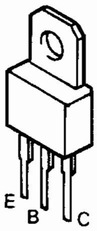
2SA561
2SC734
2SC1681



2SA509

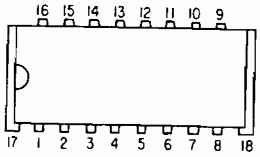


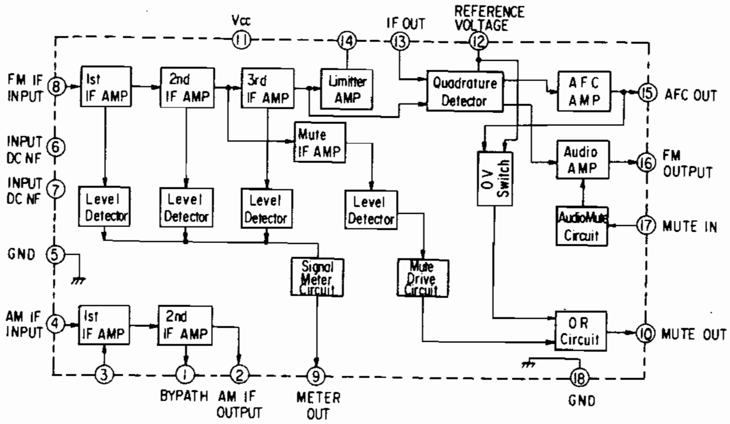
2SD234



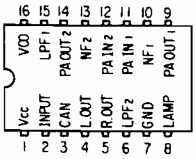
2SB686
2SD716

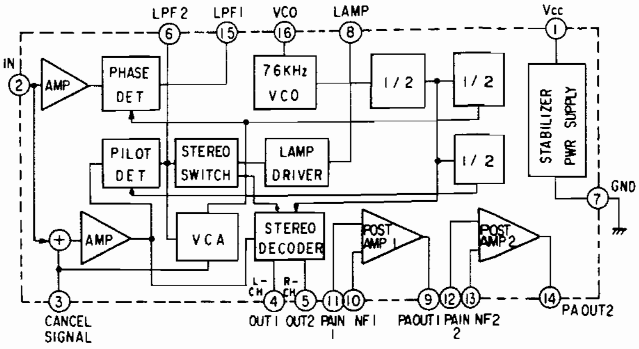
HA11211


16
15
14
13
12
11
10
9
17
1
2
3
4
5
6
7
8
18

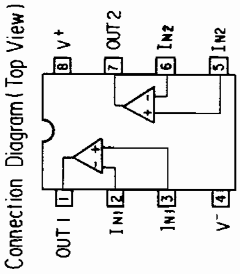

Vcc
IF OUT
REFERENCE VOLTAGE
FM IF INPUT
1st IF AMP
2nd IF AMP
3rd IF AMP
Limitter AMP
Quadrature Detector
AFC AMP
AFC OUT
INPUT DC NF
Mute IF AMP
Audio AMP
FM OUTPUT
INPUT DC NF
Level Detector
Level Detector
Level Detector
Level Detector
0V Switch
AudioMute Circuit
MUTE IN
GND
Signal Meter Circuit
Mute Drive Circuit
AM IF INPUT
1st IF AMP
2nd IF AMP
OR Circuit
MUTE OUT
BYPATH
AM IF OUTPUT
METER OUT
GND

TA7624P

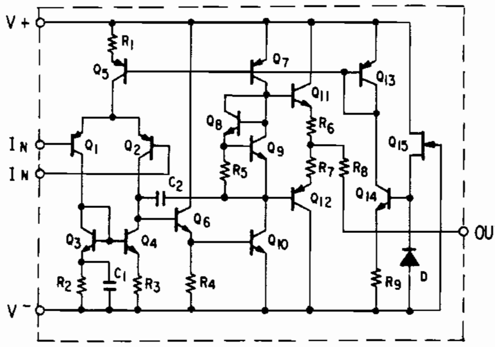

16 15 14 13 12 11 10 9
VCO
LPF1
PA OUT2
NF2
PA IN2
PA IN1
NF1
PA OUT1
Vcc
INPUT
CAN
L.OUT
R.OUT
LPF2
GND
LAMP
1 2 3 4 5 6 7 8


LPF2
LPF1
VCO
LAMP
Vcc
IN
AMP
PHASE DET
76KHz VCO
1/2
1/2
1/2
STABILIZER PWR SUPPLY
PILOT DET
STEREO SWITCH
LAMP DRIVER
GND
AMP
VCA
STEREO DECODER
POST AMP 1
POST AMP 2
L-CH
R-CH
CANCEL SIGNAL
OUT1
OUT2
PA IN 1
NF1
PA OUT1
PA IN 2
NF2
PA OUT2

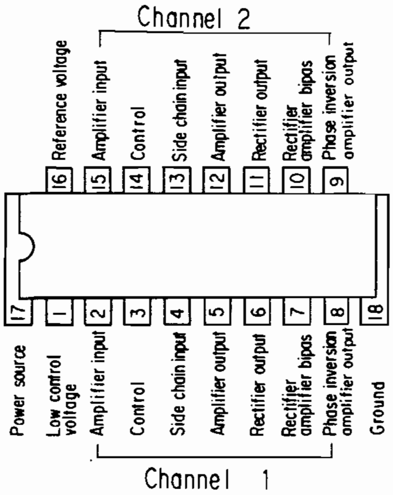
NJM4558D-K

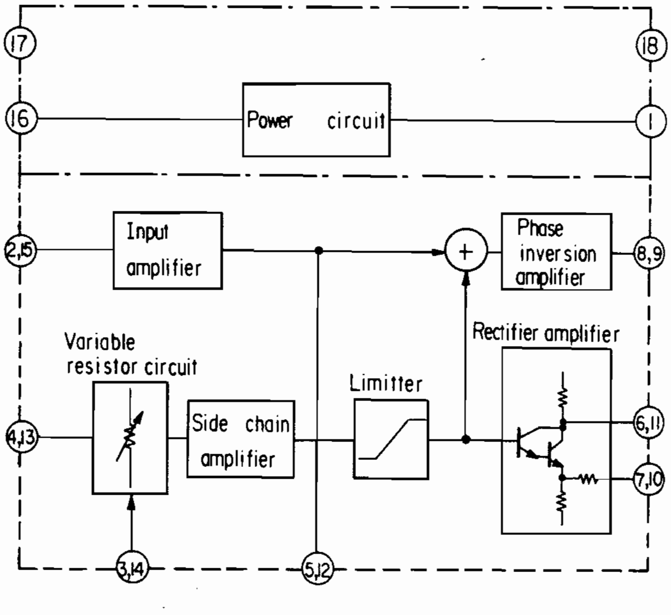

Connection Diagram (Top View)
8 V+
7 OUT2
6 IN2
5 IN2
1 OUT1
2 IN1
3 IN1
4 V-

Equivalent Circuit (1/2 Circuit)

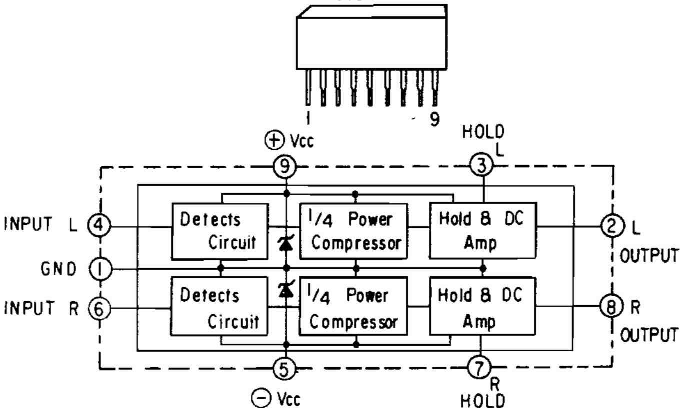

V+
R1
Q5
Q7
Q11
Q13
IN
IN
Q1
Q2
Q8
R6
Q9
Q15
R5
R7
R8
C2
Q14
Q12
Q6
OUT
Q3
Q4
Q10
R2
C1
R3
R4
R9
D
V-

HA11226


Channel 2
Reference voltage
Amplifier input
Control
Side chain input
Amplifier output
Rectifier output
Rectifier amplifier bipas
Phase inversion amplifier output
16
15
14
13
12
11
10
9
17
1
2
3
4
5
6
7
8
18
Power source
Low control voltage
Amplifier input
Control
Side chain input
Amplifier output
Rectifier output
Rectifier amplifier bipas
Phase inversion amplifier output
Ground
Channel 1

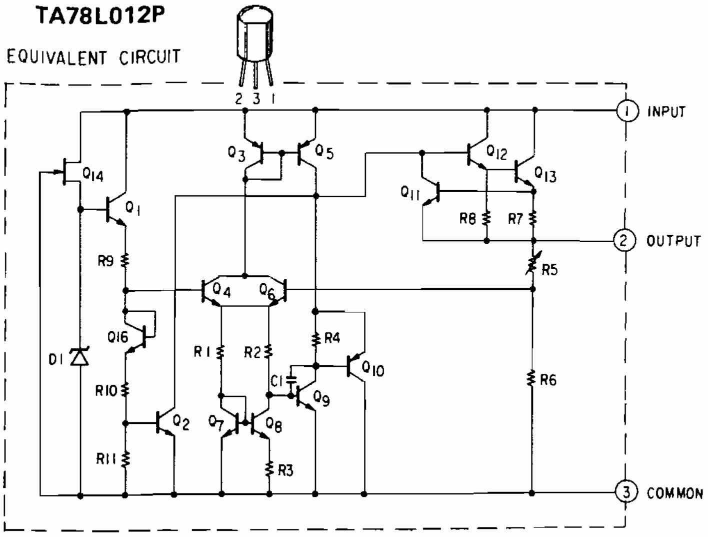

17
18
16
Power circuit
1
2,5
Input amplifier
Phase inversion amplifier
8,9
Variable resistor circuit
Rectifier amplifier
Limitter
4,13
Side chain amplifier
6,11
7,10
3,14
5,12

TA7318P

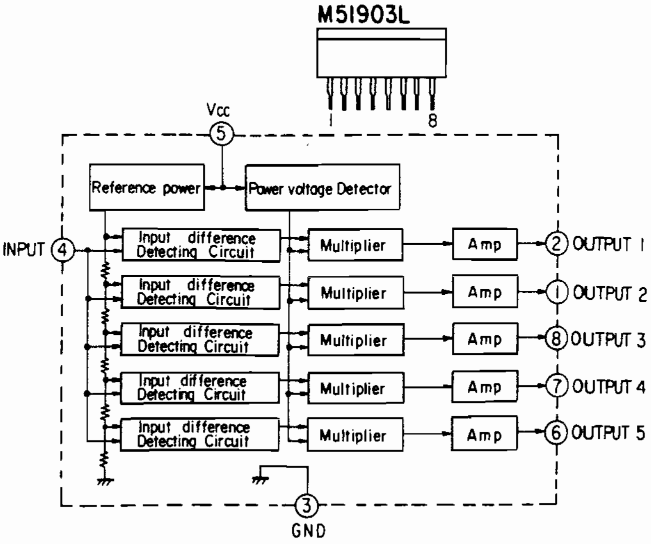

1
9
⊕ Vcc
HOLD L
INPUT L
Detects Circuit
1/4 Power Compressor
Hold & DC Amp
L OUTPUT
GND
INPUT R
Detects Circuit
1/4 Power Compressor
Hold & DC Amp
R OUTPUT
⊖ Vcc
R HOLD
9
3
4
2
1
6
8
5
7

TA78L012P

EQUIVALENT CIRCUIT

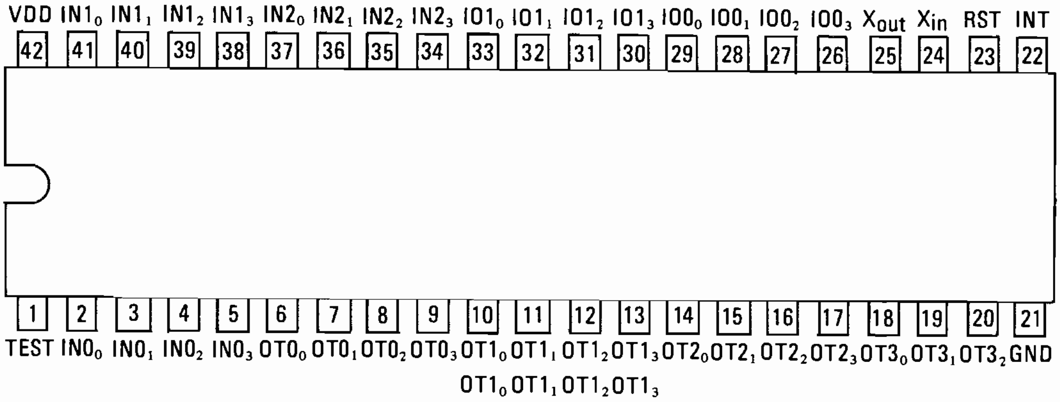

2 3 1
① INPUT
② OUTPUT
③ COMMON
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
Q14
Q16
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
C1
D1

M51903L


1
8
Vcc
⑤
Reference power
Power voltage Detector
INPUT ④
Input difference Detecting Circuit
Input difference Detecting Circuit
Input difference Detecting Circuit
Input difference Detecting Circuit
Input difference Detecting Circuit
Multiplier
Multiplier
Multiplier
Multiplier
Multiplier
Amp
Amp
Amp
Amp
Amp
② OUTPUT 1
① OUTPUT 2
⑧ OUTPUT 3
⑦ OUTPUT 4
⑥ OUTPUT 5
③
GND

TMP4315P-0202

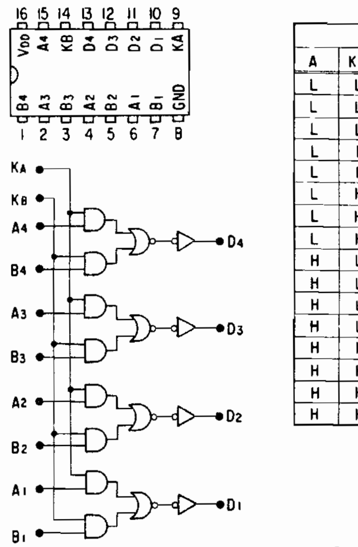
1. Signal Terminals


VDD IN1$_0$ IN1$_1$ IN1$_2$ IN1$_3$ IN2$_0$ IN2$_1$ IN2$_2$ IN2$_3$ IO1$_0$ IO1$_1$ IO1$_2$ IO1$_3$ IO0$_0$ IO0$_1$ IO0$_2$ IO0$_3$ X$_{out}$ X$_{in}$ RST INT
42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
TEST IN0$_0$ IN0$_1$ IN0$_2$ IN0$_3$ OT0$_0$ OT0$_1$ OT0$_2$ OT0$_3$ OT1$_0$ OT1$_1$ OT1$_2$ OT1$_3$ OT2$_0$ OT2$_1$ OT2$_2$ OT2$_3$ OT3$_0$ OT3$_1$ OT3$_2$ GND
OT1$_0$ OT1$_1$ OT1$_2$ OT1$_3$

2. Signal Terminal's Function

Terminal	Input Output	Function
IN0$_0$ ——— IN0$_3$	Input	Input port IN0
IN1$_0$ ——— IN1$_3$	Input	Input port IN1
IN2$_0$ ——— IN2$_3$	Input	Input port IN2
OT0$_0$ ——— OT0$_3$	Output	Output port OT0, All output is 1 by $\overline{\text{RTS}}$ signal
OT1$_0$ ——— OT1$_3$	Output	Output port OT1, All output is 1 by $\overline{\text{RTS}}$ signal
OT2$_0$ ——— OT2$_3$	Output	Output port OT2, All output is 1 by $\overline{\text{RTS}}$ signal
OT3$_0$ ——— OT3$_2$	Output	Output port OT3, All output is 1 by $\overline{\text{RTS}}$ signal
IO0$_0$ ——— IO0$_3$	Input Output	Input/Output port IO0, All output is 1 by $\overline{\text{RTS}}$ signal
IO1$_0$ ——— IO1$_3$	Input Output	Input/Output port IO1, All output is 1 by $\overline{\text{RTS}}$ signal
$\overline{\text{RST}}$	Input	Initialize signal
$\overline{\text{INT}}$	Input	Offering signal
XIN	Input	Foundation clock input terminal
XOUT	Output	Foundation clock Output terminal, Open while external clock is supplied
$\overline{\text{TEST}}$	Input	LSI test terminal, User is always 1
VDD	Power	5V
GND	Power	0V

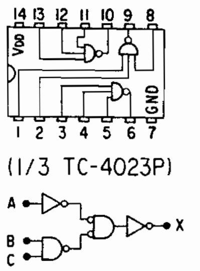
TC 4019P


VDD
A4
KB
D4
D3
D2
D1
KA
B4
A3
B3
A2
B2
A1
B1
GND
KA
KB
A4
B4
A3
B3
A2
B2
A1
B1
D4
D3
D2
D1

D = A·KA + B·KB

INPUT				OUT
A	KA	B	KB	D
L	L	L	L	L
L	L	L	H	L
L	L	H	L	L
L	L	H	H	H
L	H	L	L	L
L	H	L	H	L
L	H	H	L	L
L	H	H	H	H
H	L	L	L	L
H	L	L	H	L
H	L	H	L	L
H	L	H	H	H
H	H	L	L	H
H	H	L	H	H
H	H	H	L	H
H	H	H	H	H

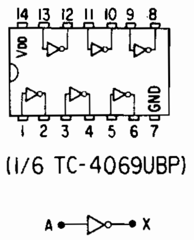
TC 4023P


VDD
GND
A
B
C
X

(1/3 TC-4023P)

INPUT			OUT
A	B	C	X
L	L	L	H
L	L	H	H
L	H	L	H
L	H	H	H
H	L	L	H
H	L	H	H
H	H	L	H
H	H	H	L

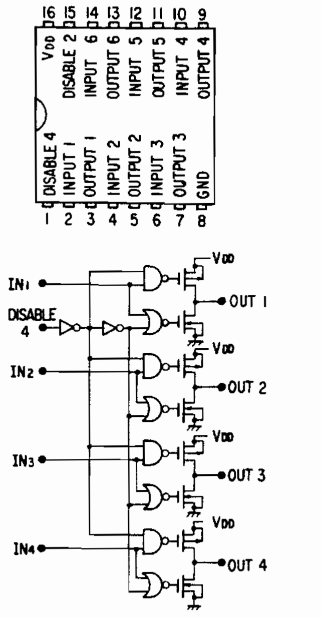
TC 4069UBP

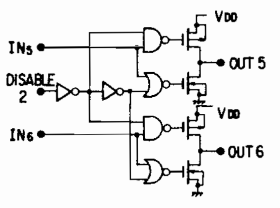


(1/6 TC-4069UBP)

INPUT	OUT
A	X
L	H
H	L

TC 5012P

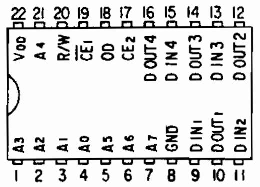

VDD
DISABLE 2
INPUT 6
OUTPUT 6
INPUT 5
OUTPUT 5
INPUT 4
OUTPUT 4
DISABLE 4
INPUT 1
OUTPUT 1
INPUT 2
OUTPUT 2
INPUT 3
OUTPUT 3
GND
IN1
DISABLE 4
IN2
IN3
IN4
VDD
OUT 1
OUT 2
OUT 3
OUT 4


IN5
DISABLE 2
IN6
VDD
OUT 5
OUT 6

DISABLE INPUT		INPUT	OUTPUT	
DIS. 4	DIS. 2			
L	L	L	L	
L	L	H	H	
L	H	☆	H Z	*
H	L	☆	H Z	**
H	H	☆	H Z	***

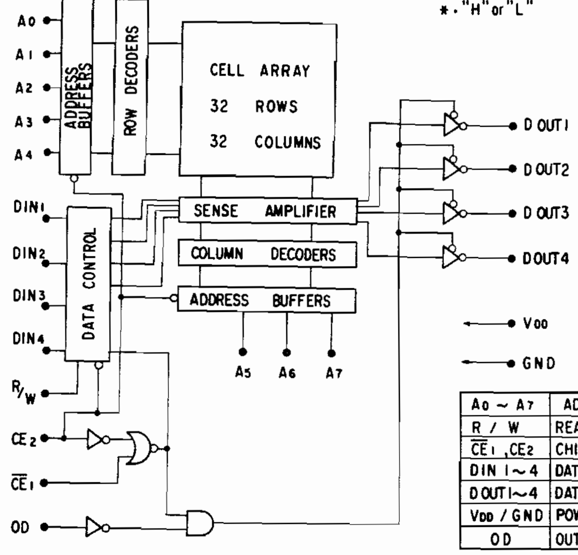
☆ "H" or "L"
* OUTPUT 1 ~ 4 High Impedance
** OUTPUT 5, 6 〃
*** OUTPUT 1 ~ 6 〃

TC 5501P


VDD
A4
R/W
CE1
OD
CE2
D OUT4
D IN4
D OUT3
D IN3
D OUT2
A3
A2
A1
A0
A5
A6
A7
GND
D IN1
D OUT1
D IN2

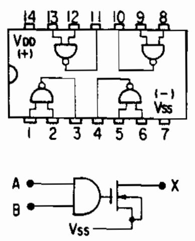
$\overline{CE_1}$	CE_2	R/W	OD	DIN	$A_0 \sim A_7$	Dout	OPERATION
H	*	*	*	*	Changing	High Impedance	Precharging
*	L	*	*	*	Changing	↑	Precharging
L	H	L	H	H/L	Stable	↑	Write "H/L"
L	H	L	L	H/L	Stable	READ H/L	Write / Read "H/L"
L	H	H	L	*	Stable	READ H/L	Read Cycle

* · "H" or "L"


A0
A1
A2
A3
A4
ADDRESS BUFFERS
ROW DECODERS
CELL ARRAY
32 ROWS
32 COLUMNS
DIN1
DIN2
DIN3
DIN4
DATA CONTROL
SENSE AMPLIFIER
COLUMN DECODERS
ADDRESS BUFFERS
A5
A6
A7
R/W
CE2
CE1
OD
D OUT1
D OUT2
D OUT3
D OUT4
VDD
GND

$A_0 \sim A_7$	ADDRESS INPUTS
R / W	READ/WRITE INPUT
$\overline{CE_1}$, CE_2	CHIP ENABLE
DIN 1 ~ 4	DATA INPUT
D OUT 1 ~ 4	DATA OUTPUT
VDD / GND	POWER SUPPLY
OD	OUTPUT DISABLE

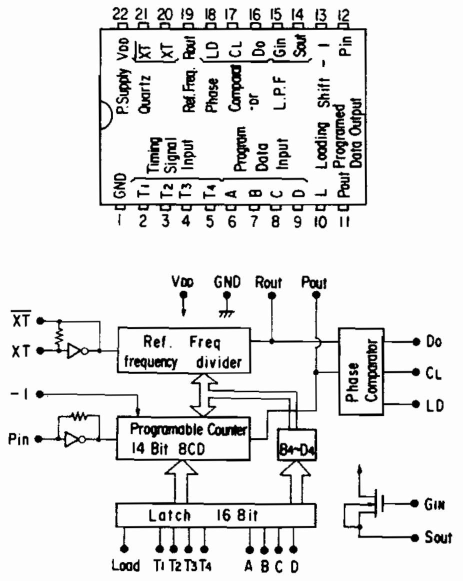
TC 5029P


VDD (+)
Vss (−)
A
B
Vss
X

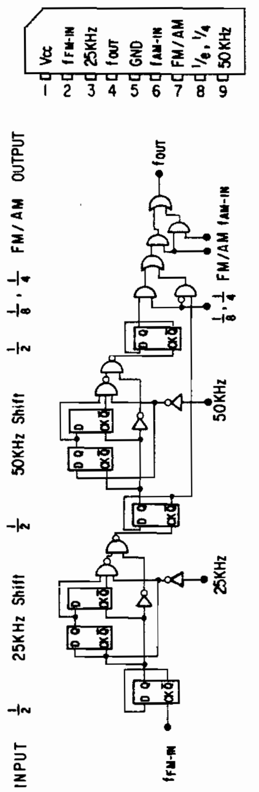
INPUTS		OUTPUT
B	A	X
L	L	HZ
L	H	HZ
H	L	HZ
H	H	L

HZ : High Impedance

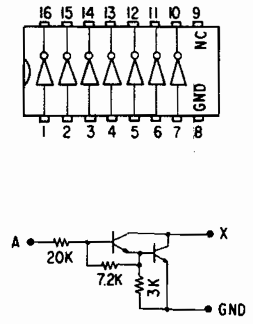
TC 9123P


P.Supply
VDD
Quartz
XT
Ref. Freq
Rout
Pout
Phase Comparator
LD
CL
DO
Gin
Sout
L.P.F
Shift
Pin
GND
Timing Signal Input
T1
T2
T3
T4
Program Data Input
A
B
C
D
Loading
Programed Data Output
L
Pout
Vdd
GND
Rout
Pout
XT
XT
−1
Pin
Ref. Freq frequency divider
Programable Counter 14 Bit BCD
B4~D4
Phase Comparator
Do
CL
LD
Latch 16 Bit
Load
T1 T2 T3 T4
A B C D
GIN
Sout

TD 6102P


Vcc
fFM-IN
25KHz
fOUT
GND
fAM-IN
FM/AM
1/6, 1/4
50KHz
OUTPUT
FM/AM
1/6 · 1/4
1/2
50KHz Shift
1/2
25KHz Shift
1/2
INPUT
fout
fAM-IN
FM/AM
50KHz
25KHz
fFM-IN

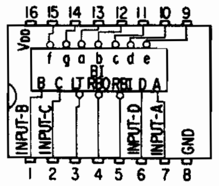
TD 62105P


NC
GND
A
20K
7.2K
3K
X
GND

INPUT	OUTPUT
A	X
L	HZ
H	L

HZ : High Impedance

TD 34247AP


Vcc
f
g
a
b
c
d
e
B
C
LT
RBI
RBO
BI
D
A
INPUT-B
INPUT-C
INPUT-D
INPUT-A
GND

BI or RBO —— Blanking Input or Ripple Blanking Output
LT —— Lamp Test Input
RBI—— Ripple Blanking Input

FUNCTION	INPUT							OUTPUT							NOTE
	LT	RBI	D	C	B	A	BI/RBO	a	b	c	d	e	f	g	
0	H	H	L	L	L	L	H	ON	ON	ON	ON	ON	ON	OFF	1
1	H	X	L	L	L	H	H	OFF	ON	ON	OFF	OFF	OFF	OFF	1
2	H	X	L	L	H	L	H	ON	ON	OFF	ON	ON	OFF	ON	2
3	H	X	L	L	H	H	H	ON	ON	ON	ON	OFF	OFF	ON	3
4	H	X	L	H	L	L	H	OFF	ON	ON	OFF	OFF	ON	ON	4
5	H	X	L	H	L	H	H	ON	OFF	ON	ON	OFF	ON	ON	5
6	H	X	L	H	H	L	H	OFF	OFF	ON	ON	ON	ON	ON	6
7	H	X	L	H	H	H	H	ON	ON	ON	OFF	OFF	OFF	OFF	7
8	H	X	H	L	L	L	H	ON	ON	ON	ON	ON	ON	ON	8
9	H	X	H	L	L	H	H	ON	ON	ON	OFF	OFF	ON	ON	9
10	H	X	H	L	H	L	H	OFF	OFF	OFF	ON	ON	OFF	ON	10
11	H	X	H	L	H	H	H	OFF	OFF	ON	ON	OFF	OFF	ON	11
12	H	X	H	H	L	L	H	OFF	ON	OFF	OFF	OFF	ON	ON	12
13	H	X	H	H	L	H	H	ON	OFF	OFF	ON	OFF	ON	ON	13
14	H	X	H	H	H	L	H	OFF	OFF	OFF	ON	ON	ON	ON	14
15	H	X	H	H	H	H	H	OFF	OFF	OFF	OFF	OFF	OFF	OFF	15
BI	X	X	X	X	X	X	L	OFF	OFF	OFF	OFF	OFF	OFF	OFF	2
RBI	H	L	L	L	L	L	L	OFF	OFF	OFF	OFF	OFF	OFF	OFF	3
LT	L	X	X	X	X	X	H	ON	ON	ON	ON	ON	ON	ON	4

TLG 325

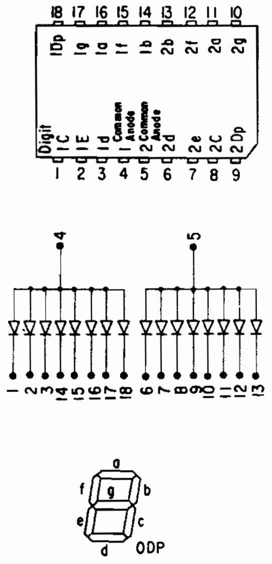
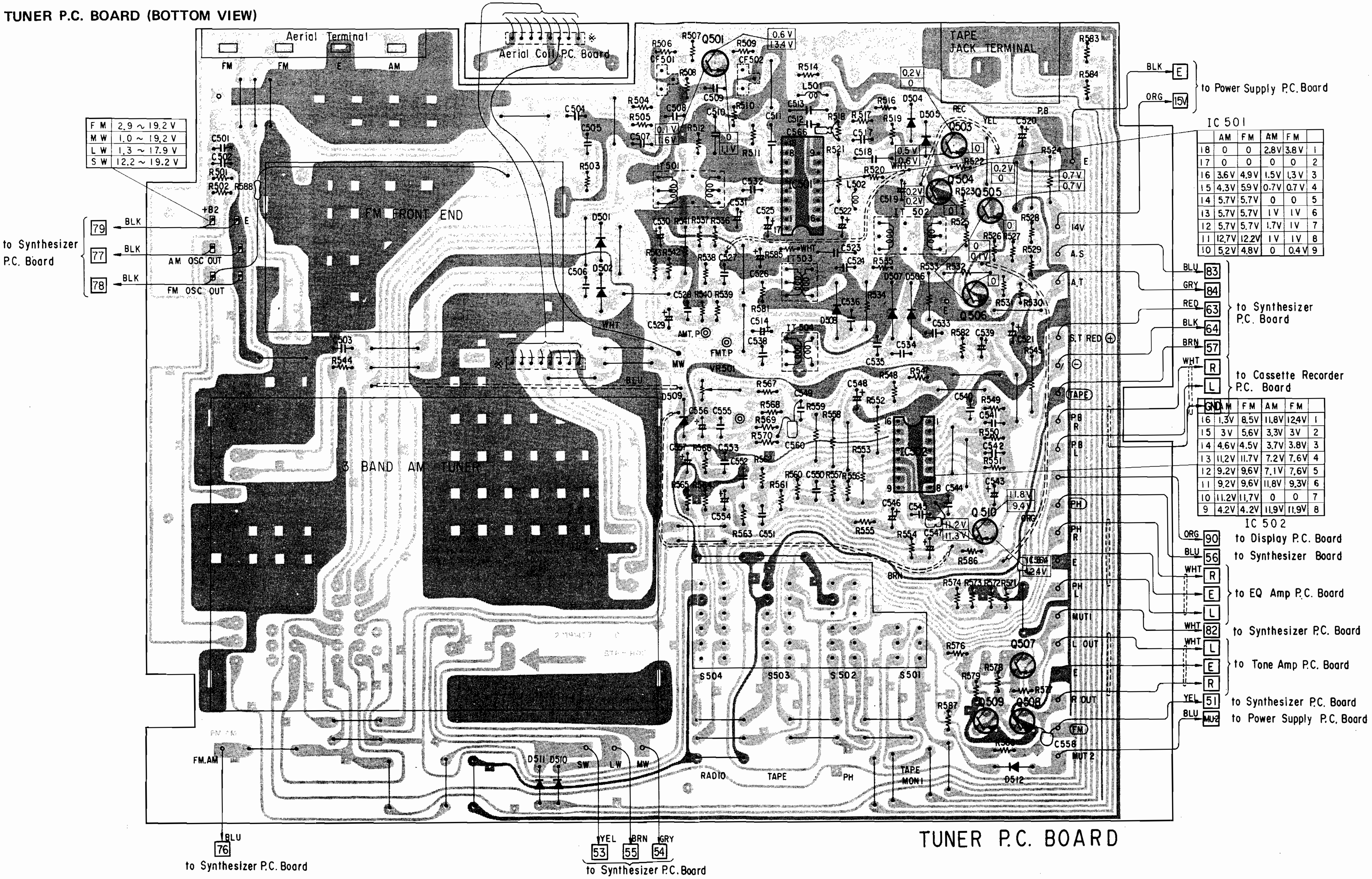

1Dp
1g
1a
1f
1b
2b
2f
2a
2g
Digit
1C
1E
1d
Common Anode
Common Anode
2d
2e
2C
2Dp
4
5
a
b
c
d
e
f
g
ODP

Figure 28.

14. P.C. BOARD PARTS LOCATIONS AND SCHEMATIC DIAGRAM

TUNER P.C. BOARD (BOTTOM VIEW)


Aerial Terminal
FM
FM
E
AM
Aerial Coil P.C. Board
FM FRONT END
3 BAND AM TUNER
TAPE JACK TERMINAL
TUNER P.C. BOARD
+B2
AM OSC OUT
FM OSC OUT
BLK 79
BLK 77
BLK 78
to Synthesizer P.C. Board
BLK E
ORG 15V
to Power Supply P.C. Board
BLU 83
GRY 84
RED 63
BLK 64
BRN 57
to Synthesizer P.C. Board
WHT R
L
GND
to Cassette Recorder P.C. Board
ORG 90
to Display P.C. Board
BLU 56
to Synthesizer Board
WHT R
E
L
to EQ Amp P.C. Board
WHT 82
to Synthesizer P.C. Board
WHT L
E
R
to Tone Amp P.C. Board
YEL 51
to Synthesizer P.C. Board
BLU MU-2
to Power Supply P.C. Board
BLU 76
to Synthesizer P.C. Board
YEL 53
BRN 55
GRY 54
to Synthesizer P.C. Board
Q501
Q503
Q504
Q505
Q506
Q507
Q508
Q509
Q510
IC501
IC502
IT501
IT502
IT503
IT504
L501
L502
CF501
CF502
D501
D502
D504
D505
D507
D508
D509
D510
D511
D512
D506
VR501
AMT.P
FMT.P
S504
S503
S502
S501
RADIO
TAPE
PH
TAPE MONI
FM.AM
SW
LW
MW
A.S
A.T
S.T RED ⊕
⊖
TAPE
PB R
PB L
PH
PH R
E
PH L
MUTI
L OUT
E
R OUT
FM
MUT 2
14V
REC
YEL
P.B
0.6 V
13.4 V
0.2 V
0
0.1 V
1.6 V
0
11 V
0.5 V
0.6 V
0.2 V
0.2 V
0.2 V
0
0.7 V
0.7 V
0
0
0.1 V
0
11.8 V
9.4 V
11.2 V
11.3 V
12.4 V
R501
R502
R503
R504
R505
R506
R507
R508
R509
R510
R511
R512
R514
R516
R517
R518
R519
R520
R521
R522
R523
R524
R525
R526
R527
R528
R529
R530
R531
R532
R533
R534
R535
R536
R537
R538
R539
R540
R541
R542
R543
R544
R545
R546
R547
R548
R549
R550
R551
R552
R553
R554
R555
R556
R557
R558
R559
R560
R561
R562
R563
R565
R566
R567
R568
R569
R570
R571
R572
R573
R574
R576
R577
R578
R579
R580
R581
R582
R583
R584
R585
R586
R587
R588
C501
C502
C503
C504
C505
C506
C507
C508
C509
C510
C511
C512
C513
C517
C518
C519
C520
C521
C522
C523
C524
C525
C526
C527
C528
C529
C530
C531
C532
C533
C534
C535
C536
C538
C539
C540
C541
C542
C543
C544
C545
C546
C547
C548
C549
C550
C551
C552
C553
C554
C555
C556
C557
C558
C559
C560
C564
C566
WHT
BLU
BRN
ORG
※

F M	2.9 ~ 19.2 V
M W	1.0 ~ 19.2 V
L W	1.3 ~ 17.9 V
S W	12.2 ~ 19.2 V

IC 501

	AM	FM	AM	FM	
18	0	0	2.8V	3.8V	1
17	0	0	0	0	2
16	3.6V	4.9V	1.5V	1.3V	3
15	4.3V	5.9V	0.7V	0.7V	4
14	5.7V	5.7V	0	0	5
13	5.7V	5.7V	1V	1V	6
12	5.7V	5.7V	1.7V	1V	7
11	12.7V	12.2V	1V	1V	8
10	5.2V	4.8V	0	0.4V	9

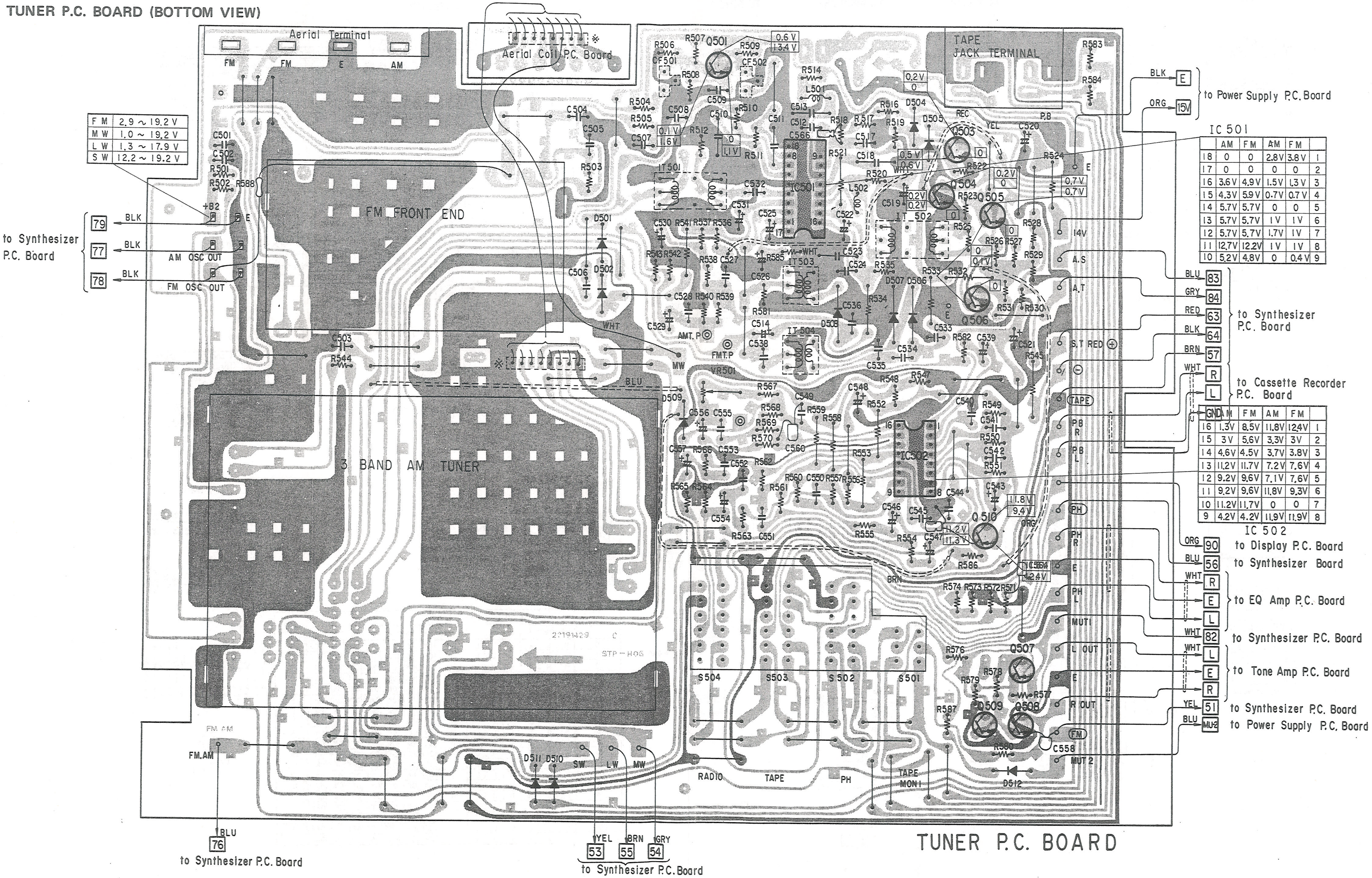
	AM	FM	AM	FM	
16	1.3V	8.5V	11.8V	12.4V	1
15	3V	5.6V	3.3V	3V	2
14	4.6V	4.5V	3.7V	3.8V	3
13	11.2V	11.7V	7.2V	7.6V	4
12	9.2V	9.6V	7.1V	7.6V	5
11	9.2V	9.6V	11.8V	9.3V	6
10	11.2V	11.7V	0	0	7
9	4.2V	4.2V	11.9V	11.9V	8

IC 502

Figure 29.

14. P.C. BOARD PARTS LOCATIONS AND SCHEMATIC DIAGRAM

TUNER P.C. BOARD (BOTTOM VIEW)


Aerial Terminal
FM
FM
E
AM
Aerial Coil P.C. Board
※
FM FRONT END
3 BAND AM TUNER
TAPE JACK TERMINAL
TUNER P.C. BOARD
+B2
E
AM OSC OUT
FM OSC OUT
BLK
79
77
78
to Synthesizer P.C. Board
BLK
E
ORG
15V
to Power Supply P.C. Board
BLU 83
GRY 84
RED 63
BLK 64
BRN 57
to Synthesizer P.C. Board
WHT R
L
to Cassette Recorder P.C. Board
GND
ORG 90
to Display P.C. Board
BLU 56
to Synthesizer Board
WHT R
E
L
to EQ Amp P.C. Board
WHT 82
to Synthesizer P.C. Board
WHT L
E
R
to Tone Amp P.C. Board
YEL 51
to Synthesizer P.C. Board
BLU MU-2
to Power Supply P.C. Board
BLU 76
to Synthesizer P.C. Board
YEL 53
BRN 55
GRY 54
to Synthesizer P.C. Board
FM.AM
D511 D510
SW
LW
MW
RADIO
TAPE
PH
TAPE MONI
S504
S503
S502
S501
D512
C558
MUT 2
FM
R OUT
L OUT
MUTI
PH L
PH R
PH
PB L
PB R
TAPE
S.T RED ⊕
⊖
A.T
A.S
14V
E
Q501
Q503
Q504
Q505
Q506
Q507
Q508
Q509
Q510
IC501
IC502
IT501
IT502
IT503
IT504
L501
L502
CF501
CF502
D501
D502
D504
D505
D506
D507
D508
D509
VR501
AMT.P
FMT.P
REC
YEL
P.B
WHT
BLU
ORG
BRN
MW
0.6 V
13.4 V
0.2V
0
0.1V
1.6V
0
1.1V
0.5V
0.6V
0.2V
0.2V
0.2V
0
0.7V
0.7V
0
0
0.1V
0
11.8V
9.4V
11.2V
11.3V
12.4V
R501 R502 R503 R504 R505 R506 R507 R508 R509 R510 R511 R512
R514 R516 R517 R518 R519 R520 R521 R522 R523 R524 R525 R526 R527 R528 R529
R530 R531 R532 R533 R534 R535 R536 R537 R538 R539 R540 R541 R542 R543 R544 R545
R547 R548 R549 R550 R551 R552 R553 R554 R555 R557 R558 R559 R560 R561 R562 R563 R564 R565 R566 R567 R568 R569 R570
R571 R572 R573 R574 R576 R577 R578 R579 R580 R581 R582 R583 R584 R585 R586 R587 R588
C501 C502 C503 C504 C505 C506 C507 C508 C509 C510 C511 C512 C513
C514 C517 C518 C519 C520 C521 C522 C523 C524 C525 C526 C527 C528 C529
C530 C531 C532 C533 C534 C535 C536 C538 C539 C540 C541 C542 C543 C544 C545 C546 C547 C548 C549
C550 C551 C552 C553 C554 C555 C556 C557 C560 C566
2219H29
STP-H06

F M	2.9 ～ 19.2 V
M W	1.0 ～ 19.2 V
L W	1.3 ～ 17.9 V
S W	12.2 ～ 19.2 V

IC 501

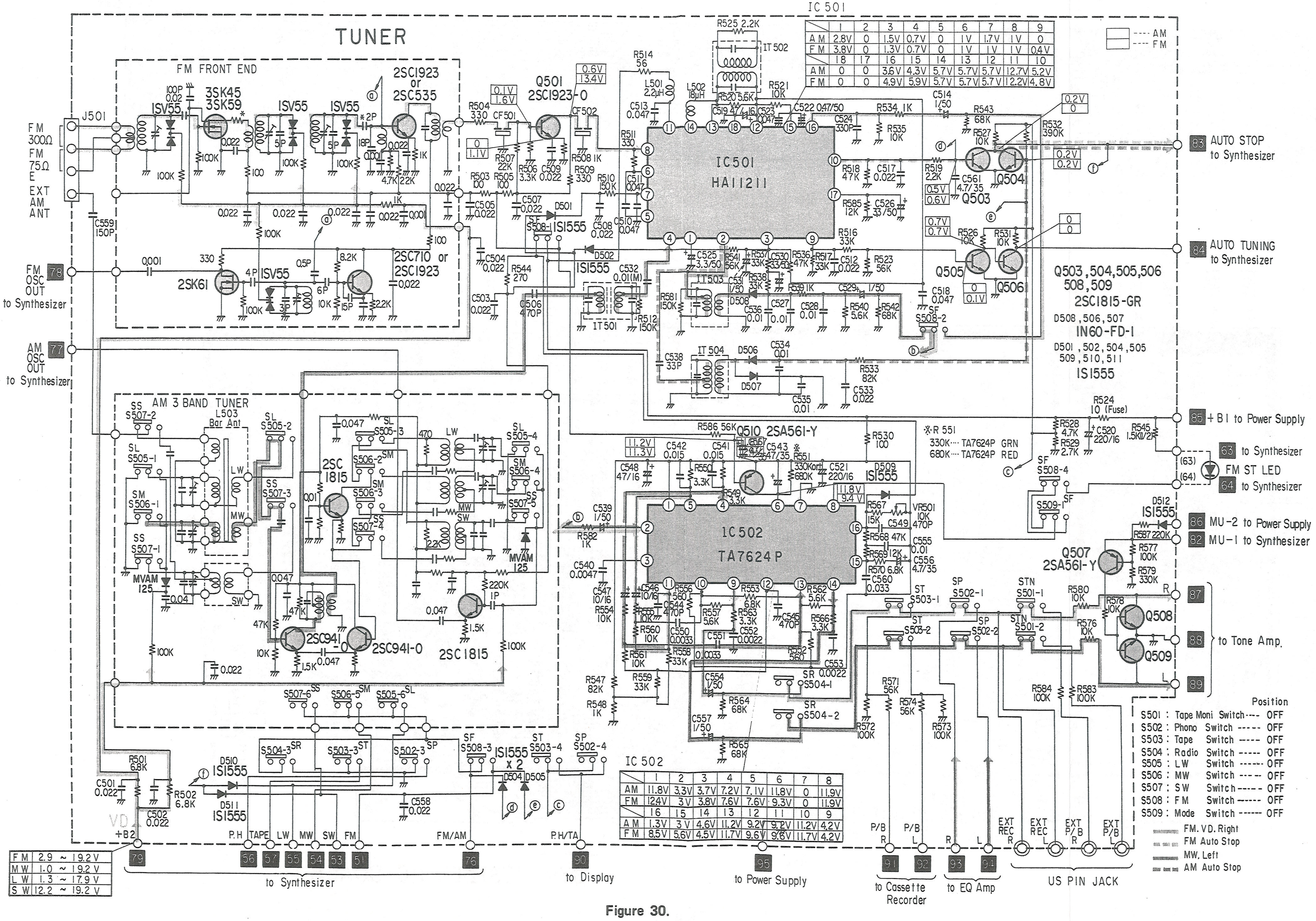
	AM	FM	AM	FM	
18	0	0	2.8V	3.8V	1
17	0	0	0	0	2
16	3.6V	4.9V	1.5V	1.3V	3
15	4.3V	5.9V	0.7V	0.7V	4
14	5.7V	5.7V	0	0	5
13	5.7V	5.7V	1V	1V	6
12	5.7V	5.7V	1.7V	1V	7
11	12.7V	12.2V	1V	1V	8
10	5.2V	4.8V	0	0.4V	9

	AM	FM	AM	FM	
16	1.3V	8.5V	11.8V	12.4V	1
15	3V	5.6V	3.3V	3V	2
14	4.6V	4.5V	3.7V	3.8V	3
13	11.2V	11.7V	7.2V	7.6V	4
12	9.2V	9.6V	7.1V	7.6V	5
11	9.2V	9.6V	11.8V	9.3V	6
10	11.2V	11.7V	0	0	7
9	4.2V	4.2V	11.9V	11.9V	8

IC 502

Figure 29.

SCHEMATIC DIAGRAM (TUNER SECTION)


TUNER
FM FRONT END
AM 3 BAND TUNER
IC501 HA11211
IC502 TA7624P
Q501 2SC1923-O
Q510 2SA561-Y
Q507 2SA561-Y
Q503,504,505,506 508,509 2SC1815-GR
D508,506,507 IN60-FD-1
D501,502,504,505 509,510,511 1S1555
3SK45 3SK59
2SC1923 or 2SC535
2SK61
2SC710 or 2SC1923
2SC1815
2SC941-O
1S1555 x 2
※R 551 330K···· TA7624P GRN 680K···· TA7624P RED
J501
FM 300Ω
FM 75Ω
E
EXT AM ANT
FM OSC OUT to Synthesizer 78
AM OSC OUT to Synthesizer 77
83 AUTO STOP to Synthesizer
84 AUTO TUNING to Synthesizer
85 +B1 to Power Supply
63 to Synthesizer
FM ST LED
64 to Synthesizer
86 MU-2 to Power Supply
82 MU-1 to Synthesizer
87 88 89 to Tone Amp.
79 +B2
P.H TAPE LW MW SW FM 56 57 55 54 53 51 to Synthesizer
FM/AM 76
P.H/TA 90 to Display
95 to Power Supply
P/B R 91 P/B L 92 to Cassette Recorder
R 93 L 94 to EQ Amp
EXT REC R EXT REC L EXT P/B R EXT P/B L
US PIN JACK
---- AM
---- FM

IC 501

	1	2	3	4	5	6	7	8	9
AM	2.8V	0	1.5V	0.7V	0	1V	1.7V	1V	0
FM	3.8V	0	1.3V	0.7V	0	1V	1V	1V	0.4V
	18	17	16	15	14	13	12	11	10
AM	0	0	3.6V	4.3V	5.7V	5.7V	5.7V	12.7V	5.2V
FM	0	0	4.9V	5.9V	5.7V	5.7V	5.7V	12.2V	4.8V

IC 502

	1	2	3	4	5	6	7	8
AM	11.8V	3.3V	3.7V	7.2V	7.1V	11.8V	0	11.9V
FM	12.4V	3V	3.8V	7.6V	7.6V	9.3V	0	11.9V
	16	15	14	13	12	11	10	9
AM	1.3V	3V	4.6V	11.2V	9.2V	9.2V	11.2V	4.2V
FM	8.5V	5.6V	4.5V	11.7V	9.6V	9.6V	11.7V	4.2V

FM	2.9 ~ 19.2 V
MW	1.0 ~ 19.2 V
LW	1.3 ~ 17.9 V
SW	12.2 ~ 19.2 V

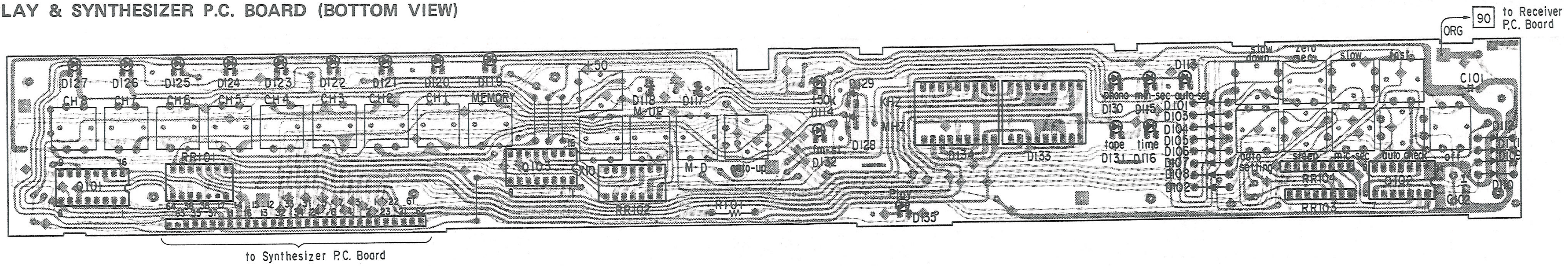
Position

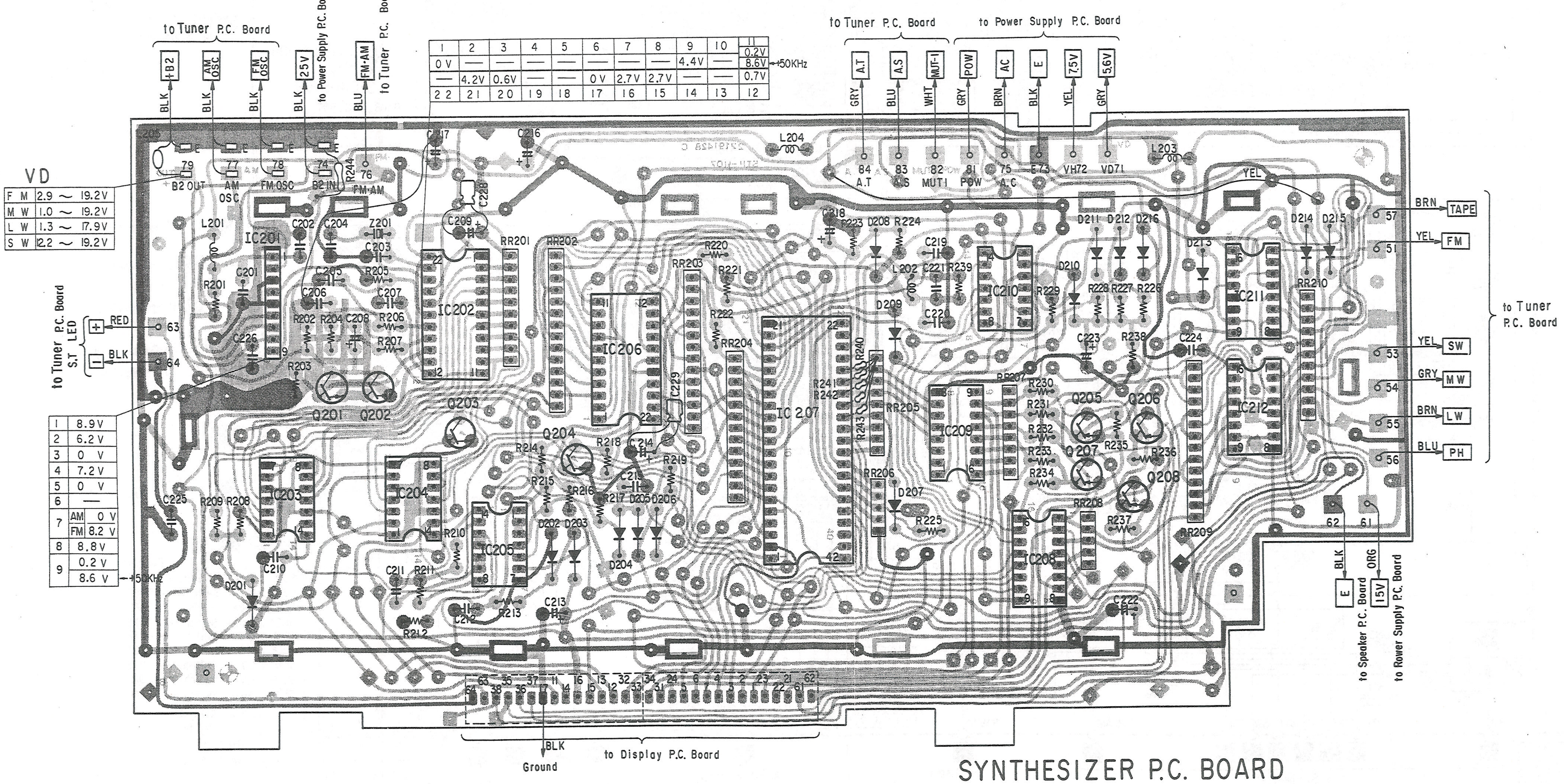
S501 : Tape Moni Switch---- OFF
S502 : Phono Switch ----- OFF
S503 : Tape Switch ---- OFF
S504 : Radio Switch ----- OFF
S505 : LW Switch ------ OFF
S506 : MW Switch ----- OFF
S507 : SW Switch----- OFF
S508 : FM Switch------ OFF
S509 : Mode Switch ------ OFF

▨ FM. VD. Right
▨ FM Auto Stop
▨ MW. Left
▨ AM Auto Stop

Figure 30.

DISPLAY & SYNTHESIZER P.C. BOARD (BOTTOM VIEW)


to Receiver P.C. Board
90
ORG
D127
D126
D125
D124
D123
D122
D121
D120
D119
CH8
CH7
CH6
CH5
CH4
CH3
CH2
CH1
MEMORY
D118
M-UP
D117
M-D
auto-up
D129
150k
D114
KHZ
MHZ
tmer
D132
D128
D134
D133
phono
min-sec
auto set
D113
D130
D115
tape
time
D131
D116
D101
D103
D104
D105
D106
D107
D108
D102
slow down
zero sec
slow
fast
auto setting
sleep
min-sec
auto check
off
C101
D111
D109
D110
C102
RR101
Q101
Q103
Q102
Q104
RR102
RR103
RR104
R101
Play
D135
to Synthesizer P.C. Board


to Tuner P.C. Board
+B2
AM OSC
FM OSC
25V
to Power Supply P.C. Board
FM·AM
to Tuner P.C. Board
BLK
BLK
BLK
BLK
BLU
79
B2 OUT
77
AM OSC
78
FM OSC
74
B2 IN
76
FM·AM
to Tuner P.C. Board
A.T
A.S
MUT-1
to Power Supply P.C. Board
POW
AC
E
7.5V
5.6V
GRY
BLU
WHT
GRY
BRN
BLK
YEL
GRY
84
A.T
83
A.S
82
MUTI
81
POW
75
A.C
E73
VH72
VD71
to Tuner P.C. Board
S.T LED
RED
BLK
63
64
BRN
TAPE
57
YEL
FM
51
to Tuner P.C. Board
YEL
SW
53
GRY
MW
54
BRN
LW
55
BLU
PH
56
62
61
BLK
ORG
E
15V
to Speaker P.C. Board
to Power Supply P.C. Board
IC201
IC202
IC203
IC204
IC205
IC206
IC207
IC208
IC209
IC210
IC211
IC212
Q201
Q202
Q203
Q204
Q205
Q206
Q207
Q208
L201
L202
L203
L204
BLK
Ground
to Display P.C. Board

VD

F M	2.9 ~ 19.2V
M W	1.0 ~ 19.2V
L W	1.3 ~ 17.9V
S W	12.2 ~ 19.2V

1	2	3	4	5	6	7	8	9	10	11
0 V	—	—	—	—	—	—	—	4.4V	—	0.2V 8.6V ←50KHz
—	4.2V	0.6V	—	—	0 V	2.7V	2.7V	—	—	0.7V
22	21	20	19	18	17	16	15	14	13	12

1	8.9V	
2	6.2V	
3	0 V	
4	7.2V	
5	0 V	
6	—	
7	AM	0 V
	FM	8.2 V
8	8.8V	
9	0.2 V	
	8.6 V ←50KHz	

SYNTHESIZER P.C. BOARD

Figure 31.

SCHEMATIC DIAGRAM (DISPLAY & SYNTHESIZER SECTION)

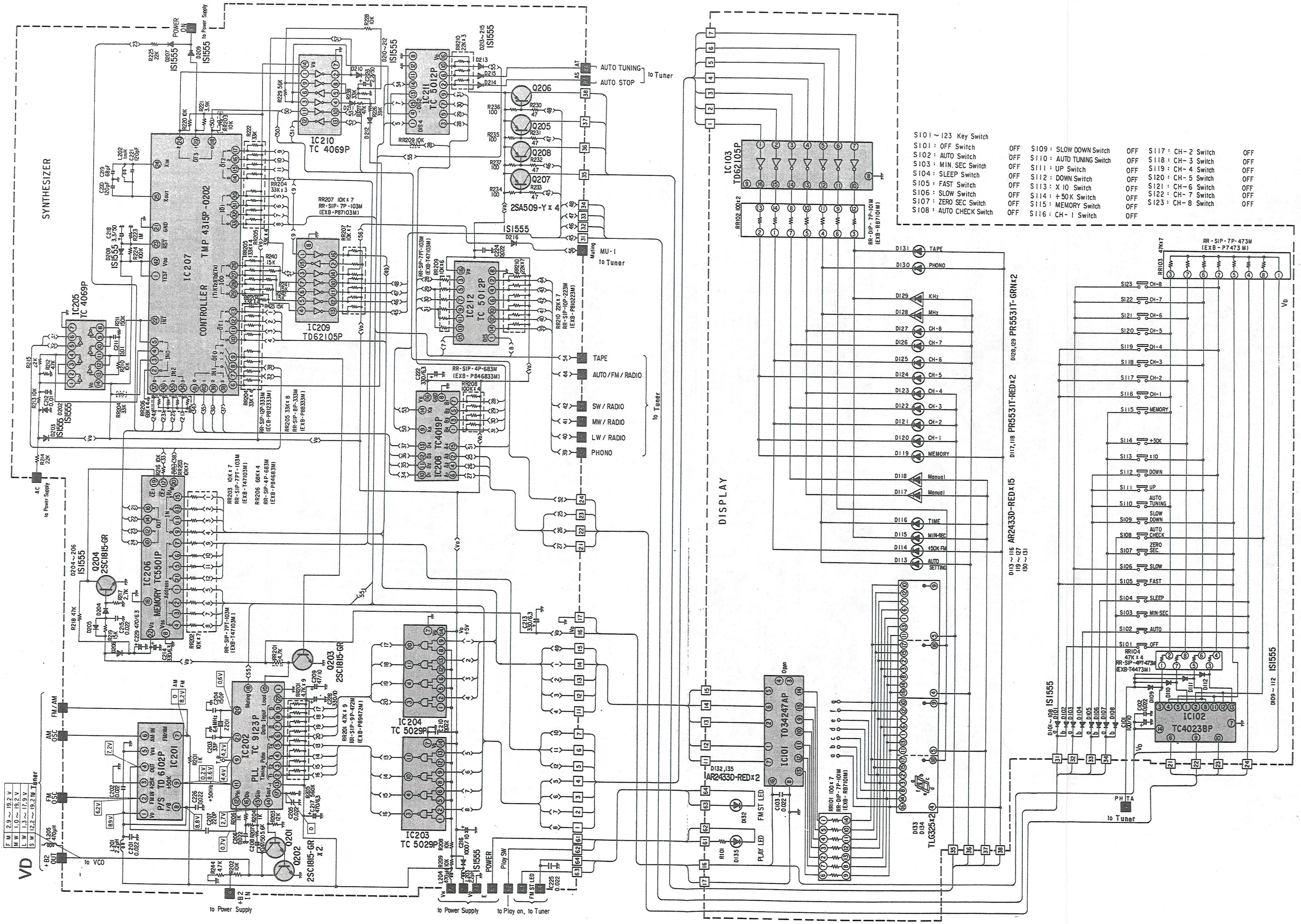

SYNTHESIZER
DISPLAY
IC207 TMP 4315P-0202 CONTROLLER
IC205 TC 4069P
IC210 TC 4069P
IC211 TC 5012P
IC209 TD62105P
IC212 TC 5012P
IC208 TC4019P
IC206 MEMORY TC5501P
IC201 TD 6102P P/S
IC202 PLL TC 9123P
IC204 TC 5029P
IC203 TC 5029P
Q204 2SC1815-GR
Q203 2SC1815-GR
Q201 Q202 2SC1815-GR x2
Q205 Q206 Q207 Q208 2SA509-Y x 4
IC103 TD62105P
IC101 TD3424AP
IC102 TC4023BP
TLG325x2
D133 D134
AUTO TUNING
AUTO STOP
to Tuner
MU-I
TAPE
AUTO/FM/RADIO
SW/RADIO
MW/RADIO
LW/RADIO
PHONO
to Power Supply
to Play on, to Tuner
to VCO
POWER ON
FM/AM
AM OSC
FM OSC
+B2 OUT
+B2 IN
FM ST LED
PLAY LED
D132,135 AR2433D-RED x2
D117,118 PR5531T-RED x2
D128,129 PR5531T-GRN x2
D113~116 119~127 130~131 AR2433D-RED x 15
TAPE
PHONO
KHz
MHz
CH-8
CH-7
CH-6
CH-5
CH-4
CH-3
CH-2
CH-1
MEMORY
Manual
Manual
TIME
MIN-SEC
+50K FM
AUTO SETTING
S101 ~ 123 Key Switch
S101 : OFF Switch OFF
S102 : AUTO Switch OFF
S103 : MIN. SEC Switch OFF
S104 : SLEEP Switch OFF
S105 : FAST Switch OFF
S106 : SLOW Switch OFF
S107 : ZERO SEC Switch OFF
S108 : AUTO CHECK Switch OFF
S109 : SLOW DOWN Switch OFF
S110 : AUTO TUNING Switch OFF
S111 : UP Switch OFF
S112 : DOWN Switch OFF
S113 : X 10 Switch OFF
S114 : +50K Switch OFF
S115 : MEMORY Switch OFF
S116 : CH- 1 Switch OFF
S117 : CH- 2 Switch OFF
S118 : CH- 3 Switch OFF
S119 : CH- 4 Switch OFF
S120 : CH- 5 Switch OFF
S121 : CH- 6 Switch OFF
S122 : CH- 7 Switch OFF
S123 : CH- 8 Switch OFF
RR103 47Kx7 RR-SIP-7P-473M (EXB-P7473M)
RR104 47Kx4 RR-SIP-4PT-473M (EXB-T4473M)
RR101 100x7 RR-DIP-7P-101M (EXB-RB7101M)
RR102 100x2 RR-DIP-7P-101M (EXB-RB7101M)
D101~108 1S1555
D109~112 1S1555
VD
FM 2.9~19.2 V
MW 1.0~19.2 V
LW 1.3~17.9 V
SW 12.2~19.2 V
Tuner

Figure 32.

AVOID & POWER SUPPLY P.C. BOARD (BOTTOM VIEW)

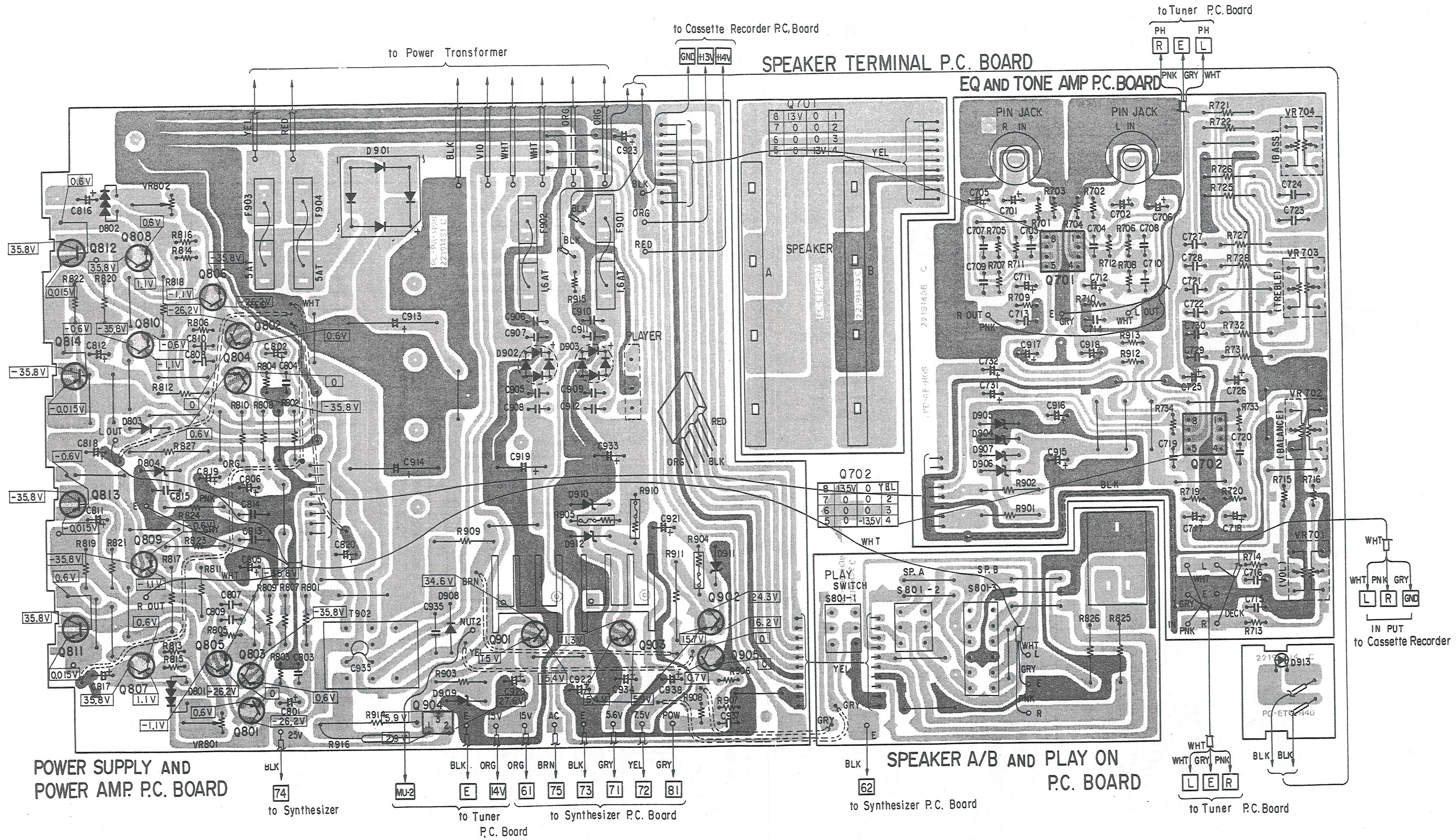

to Power Transformer
to Cassette Recorder P.C. Board
GND
H13V
H14V
SPEAKER TERMINAL P.C. BOARD
to Tuner P.C. Board
PH
R
E
L
PNK
GRY
WHT
EQ AND TONE AMP P.C. BOARD
PIN JACK R IN
PIN JACK L IN
VR704 (BASS)
VR703 (TREBLE)
VR702 (BALANCE)
VR701 (VOL)
Q701
Q702
SPEAKER
A
B
PLAYER
D901
F901
F902
F903
F904
5AT
1.6AT
Q801
Q802
Q803
Q804
Q805
Q806
Q807
Q808
Q809
Q810
Q811
Q812
Q813
Q814
Q901
Q902
Q903
Q904
Q905
VR801
VR802
T902
35.8V
-35.8V
0.6V
-0.6V
0.015V
-0.015V
1.1V
-1.1V
-26.2V
34.6V
24.3V
16.2V
15.7V
15.4V
27.6V
R OUT
L OUT
PLAY SWITCH S801-1
SP. A S801-2
SP. B S801-3
DECK
IN PUT
to Cassette Recorder
D913
POWER SUPPLY AND POWER AMP. P.C. BOARD
SPEAKER A/B AND PLAY ON P.C. BOARD
BLK
ORG
BRN
GRY
YEL
74
to Synthesizer
MU-2
E
14V
61
75
73
71
72
81
to Tuner P.C. Board
to Synthesizer P.C. Board
62
to Synthesizer P.C. Board
L
E
R
to Tuner P.C. Board

Figure 33.

SCHEMATIC DIAGRAM (AUDIO & POWER SUPPLY SECTION)

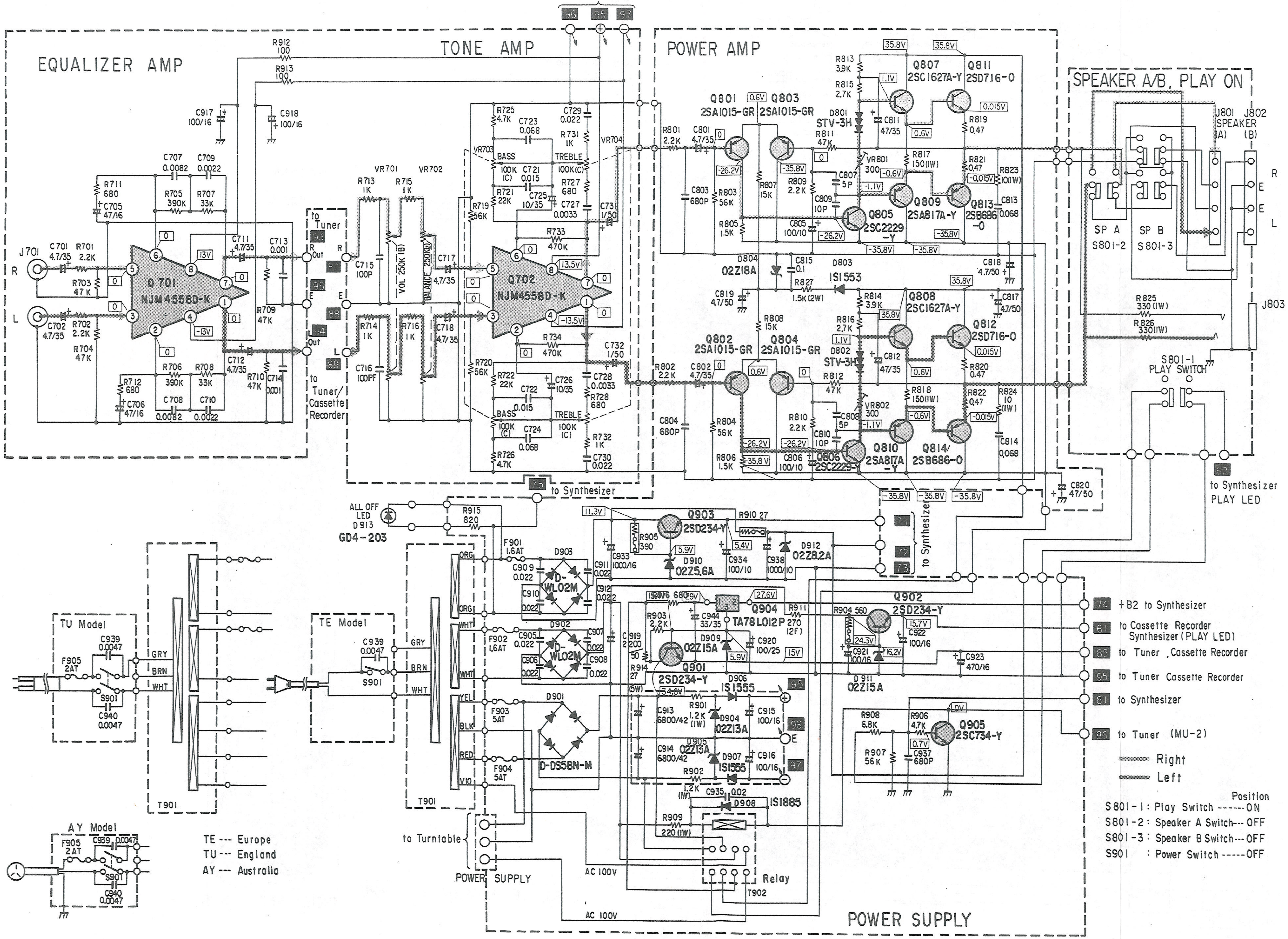
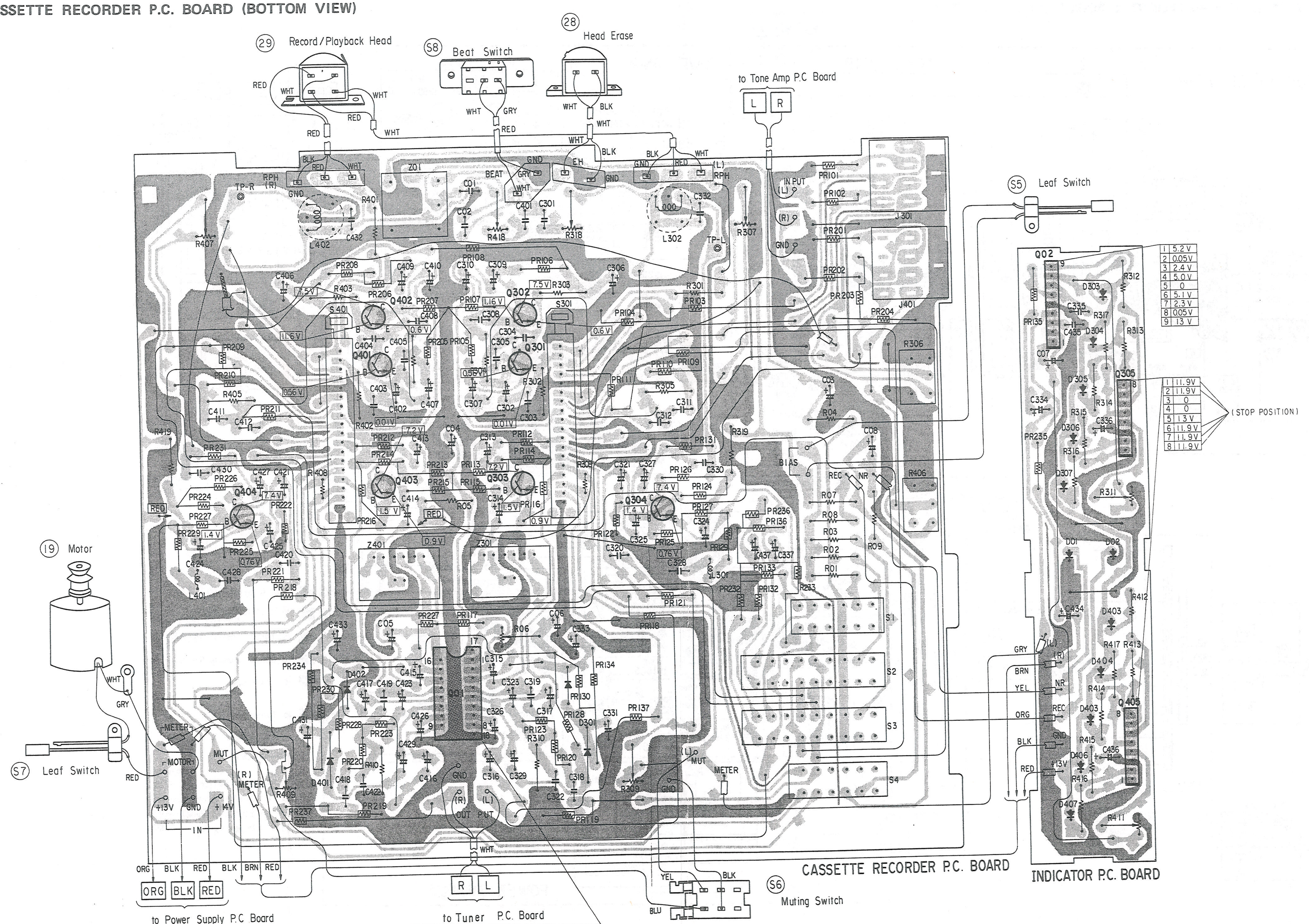

to Power Supply
96 95 97
EQUALIZER AMP
TONE AMP
POWER AMP
SPEAKER A/B, PLAY ON
J701
R
L
Q701
NJM4558D-K
Q702
NJM4558D-K
VR701
VR702
VR703
VR704
BASS
TREBLE
VOL 250K (B)
BALANCE 250K(MN)
to Tuner
Out
to Tuner/ Cassette Recorder
Q801 Q803
2SA1015-GR 2SA1015-GR
Q802 Q804
2SA1015-GR 2SA1015-GR
Q805 2SC2229-Y
Q806 2SC2229-Y
Q807 2SC1627A-Y
Q808 2SC1627A-Y
Q809 2SA817A-Y
Q810 2SA817A-Y
Q811 2SD716-0
Q812 2SD716-0
Q813 2SB686-0
Q814 2SB686-0
D801 STV-3H
D802 STV-3H
D803 1S1553
D804 02Z18A
J801 J802
SPEAKER
(A) (B)
SP A
S801-2
SP B
S801-3
J803
S801-1
PLAY SWITCH
to Synthesizer
PLAY LED
to Synthesizer
Synthesizer
ALL OFF LED
D913
GD4-203
Q903 2SD234-Y
Q901 2SD234-Y
Q902 2SD234-Y
Q904 TA78L012P
Q905 2SC734-Y
D903 D-WL02M
D902 D-WL02M
D901 D-DS5BN-M
D910 02Z5.6A
D912 02Z8.2A
D909 02Z15A
D911 02Z15A
D904 02Z13A
D905 02Z13A
D906 1S1555
D907 1S1555
D908 1S1885
F901 1.6AT
F902 1.6AT
F903 5AT
F904 5AT
F905 2AT
TU Model
TE Model
AY Model
S901
T901
T902
Relay
to Turntable
POWER SUPPLY
AC 100V
POWER SUPPLY
+B2 to Synthesizer
to Cassette Recorder Synthesizer (PLAY LED)
to Tuner, Cassette Recorder
to Tuner Cassette Recorder
to Synthesizer
to Tuner (MU-2)
Right
Left
TE --- Europe
TU --- England
AY --- Australia
Position
S801-1 : Play Switch ------ON
S801-2 : Speaker A Switch--- OFF
S801-3 : Speaker B Switch--- OFF
S901 : Power Switch -----OFF

Figure 34.

CASSETTE RECORDER P.C. BOARD (BOTTOM VIEW)


㉙ Record/Playback Head
S8 Beat Switch
㉘ Head Erase
to Tone Amp P.C Board
L
R
S5 Leaf Switch
⑲ Motor
S7 Leaf Switch
S6 Muting Switch
RED
WHT
GRY
BLK
RPH (R)
TP-R
GND
BEAT
EH
RPH (L)
IN PUT (L) (R)
TP-L
L402
L302
L401
L301
J301
J401
S401
S301
Z01
Z401
Z301
Q401
Q402
Q301
Q302
Q403
Q404
Q303
Q304
Q01
Q02
Q305
Q405
R306
R406
BIAS
REC
NR
S1
S2
S3
S4
METER
MOTOR
MUT
(R) METER
(L) MUT
(R) OUT PUT (L)
+13V GND +14V
IN
ORG BLK RED BLK BRN RED
ORG
BLK
RED
to Power Supply P.C Board
R
L
to Tuner P.C. Board
GRY (L) (R)
BRN
YEL NR
ORG REC
BLK GND
RED +13V
YEL
BLK
BLU
CASSETTE RECORDER P.C. BOARD
INDICATOR P.C. BOARD
(STOP POSITION)

1	5.2 V
2	0.05 V
3	2.4 V
4	5.0 V
5	0
6	5.1 V
7	2.3 V
8	0.05 V
9	13 V

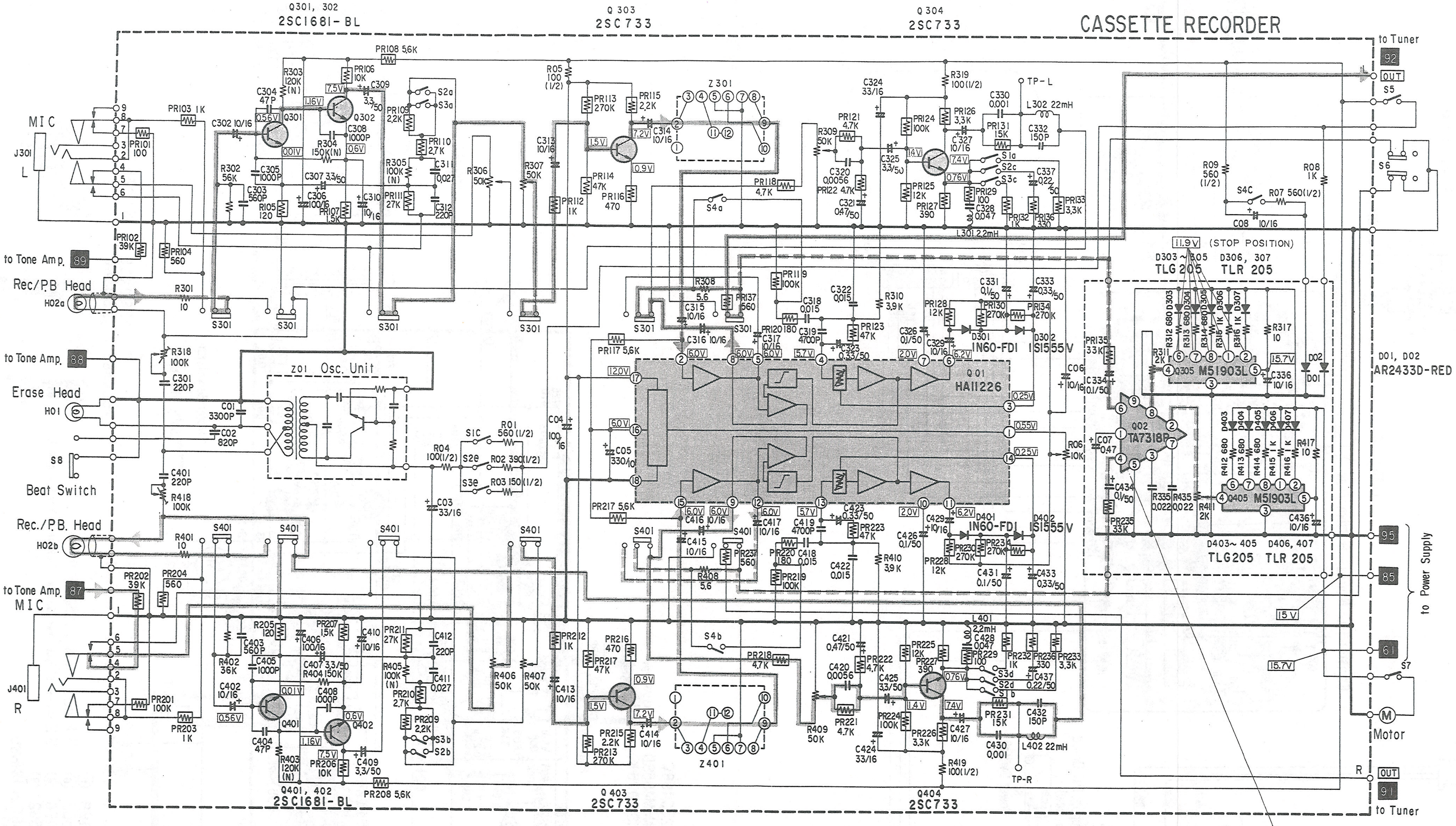
1	11.9V
2	11.9V
3	0
4	0
5	13 V
6	11.9 V
7	11.9 V
8	11.9V

(STOP POSITION)

1	2	3	4	5	6	7	8	9
0.55 V	6.0 V	0.25V	5.7 V	6.0 V	6.2V	2.0V	6.0 V	6.0V
0	12.0V	6.0 V	6.0V	0.25V	5.7V	6.0V	6.2 V	2.0V
18	17	16	15	14	13	12	11	10

Figure 35.

SCHEMATIC DIAGRAM (CASSETTE RECORDER SECTION)


Q301, 302
2SC1681-BL
Q 303
2SC733
Q 304
2SC733
CASSETTE RECORDER
to Tuner
92
OUT
S5
S6
MIC
J301
L
to Tone Amp. 89
Rec/P.B Head
H02a
S301
to Tone Amp. 88
Z01 Osc. Unit
Erase Head
H01
C01 3300P
C02 820P
S8
Beat Switch
Rec./P.B. Head
H02b
S401
to Tone Amp. 87
MIC
J401
R
Z301
Z401
S4a
S4b
S4C
Q01
HA11226
Q02
TA7318P
Q305 M51903L
Q405 M51903L
D301 IN60-FD1
D302 1S1555V
D401 IN60-FD1
D402 1S1555V
D303~305 TLG205
D306, 307 TLR 205
D403~405 TLG205
D406, 407 TLR 205
11.9V (STOP POSITION)
D01, D02
AR2433D-RED
95
85
to Power Supply
15V
15.7V
61
S7
Motor
R
OUT
91
to Tuner
TP-L
TP-R
L302 22mH
L402 22mH
L301 2.2mH
L401 2.2mH
Q401, 402
2SC1681-BL
Q 403
2SC733
Q404
2SC733

NOTES :

1. S1~4 Push switch for tape select / dolby NR.
2. S5 Leaf switch for bias (Playback position).
3. S6 Slide switch for muting (Stop position).
4. S7 Leaf switch for motor (Stop position).
5. S8 Slide switch for beat out (OFF position).
6. S301,401 Slide switch for Record / Playback (Playback Position).

▬ Record, Right

▬ Playback, Left

NO	1	2	3	4	5	6	7	8	9
V	5.2	0.05	2.4	5.0	0	5.1	2.3	0.05	15.7

Figure 36.

PLAYER P.C. BOARD (BOTTOM VIEW)

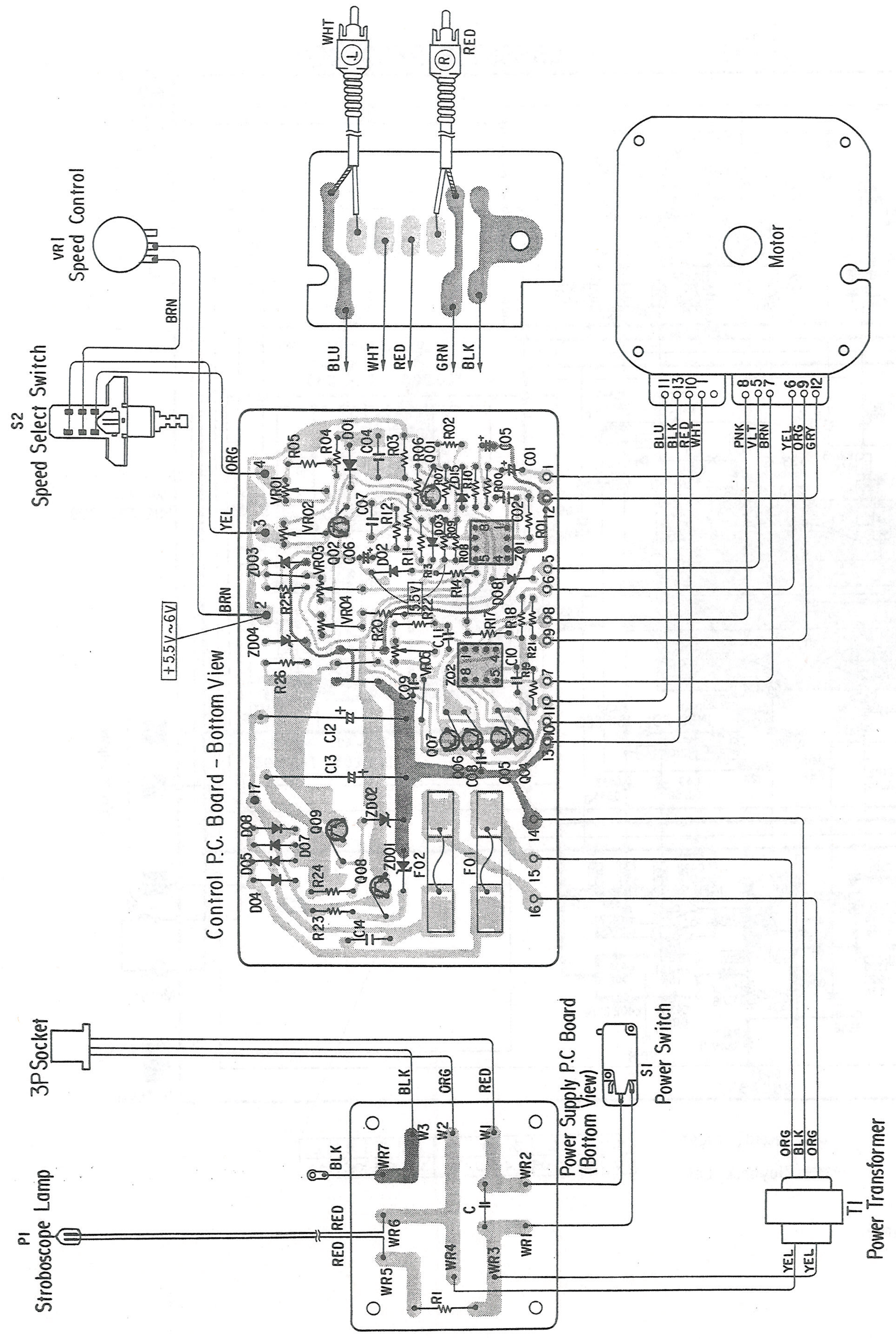

VR1 Speed Control
S2 Speed Select Switch
+5.5V~6V
Control P.C. Board - Bottom View
Motor
WHT
RED
BLU
WHT
RED
GRN
BLK
P1 Stroboscope Lamp
3P Socket
Power Supply P.C Board (Bottom View)
S1 Power Switch
T1 Power Transformer

Figure 37.

SCHEMATIC DIAGRAM (PLAYER SECTION)

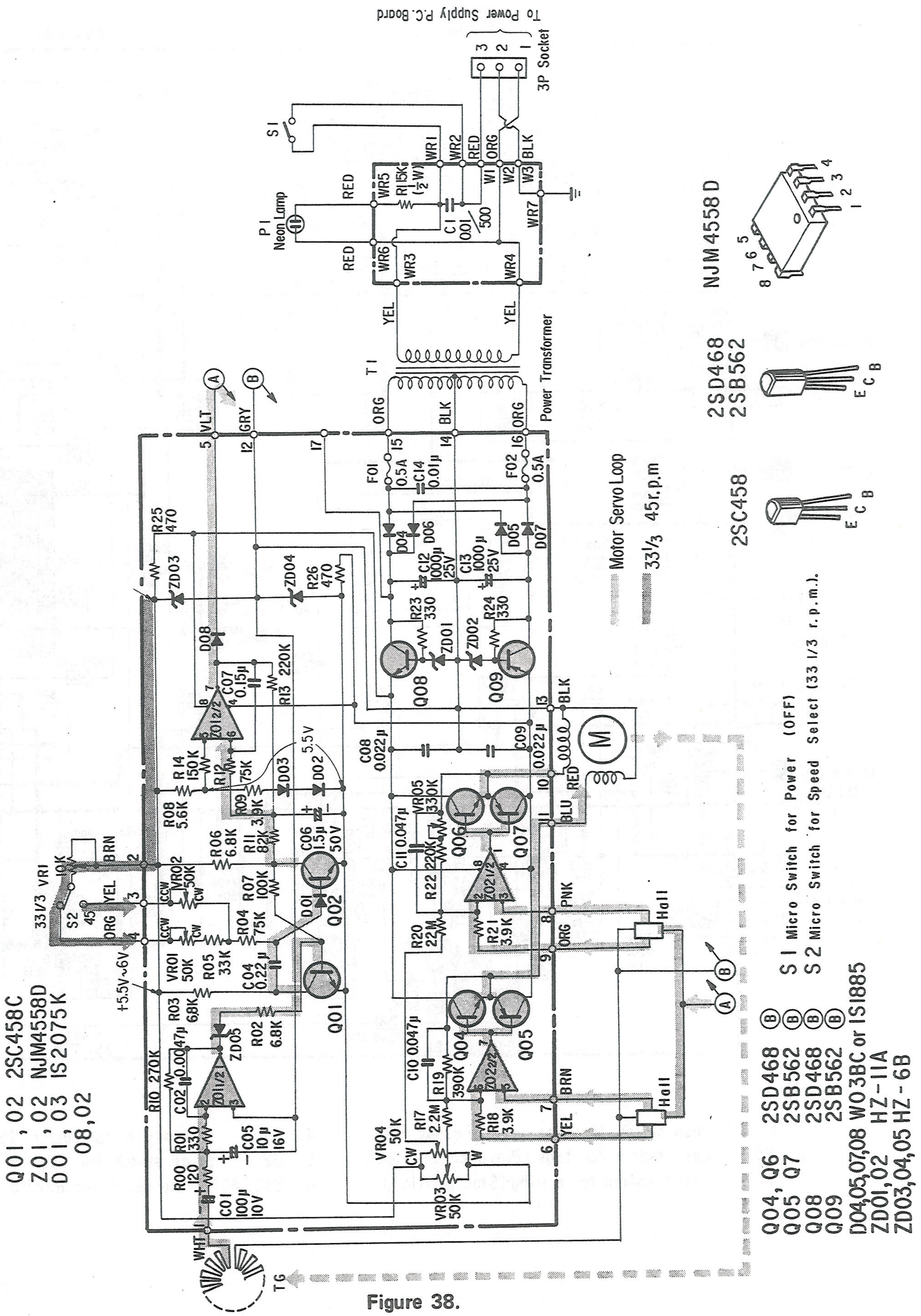

To Power Supply P.C. Board
3P Socket
S1
P1 Neon Lamp
T1 Power Transformer
Motor Servo Loop
33⅓ 45r.p.m
NJM4558D
2SD468 2SB562
2SC458
Hall
Hall
TG
Q01, 02 2SC458C
Z01, 02 NJM4558D
D01, 03 IS2075K
08, 02
Q04, Q6 2SD468 Ⓑ
Q05 Q7 2SB562 Ⓑ
Q08 2SD468 Ⓑ
Q09 2SB562 Ⓑ
D04,05,07,08 W03BC or IS1885
ZD01,02 HZ-11A
ZD03,04,05 HZ-6B
S1 Micro Switch for Power (OFF)
S2 Micro Switch for Speed Select (33 1/3 r.p.m.)

Figure 38.

SCHEMATIC DIAGRAM (OVERALL)

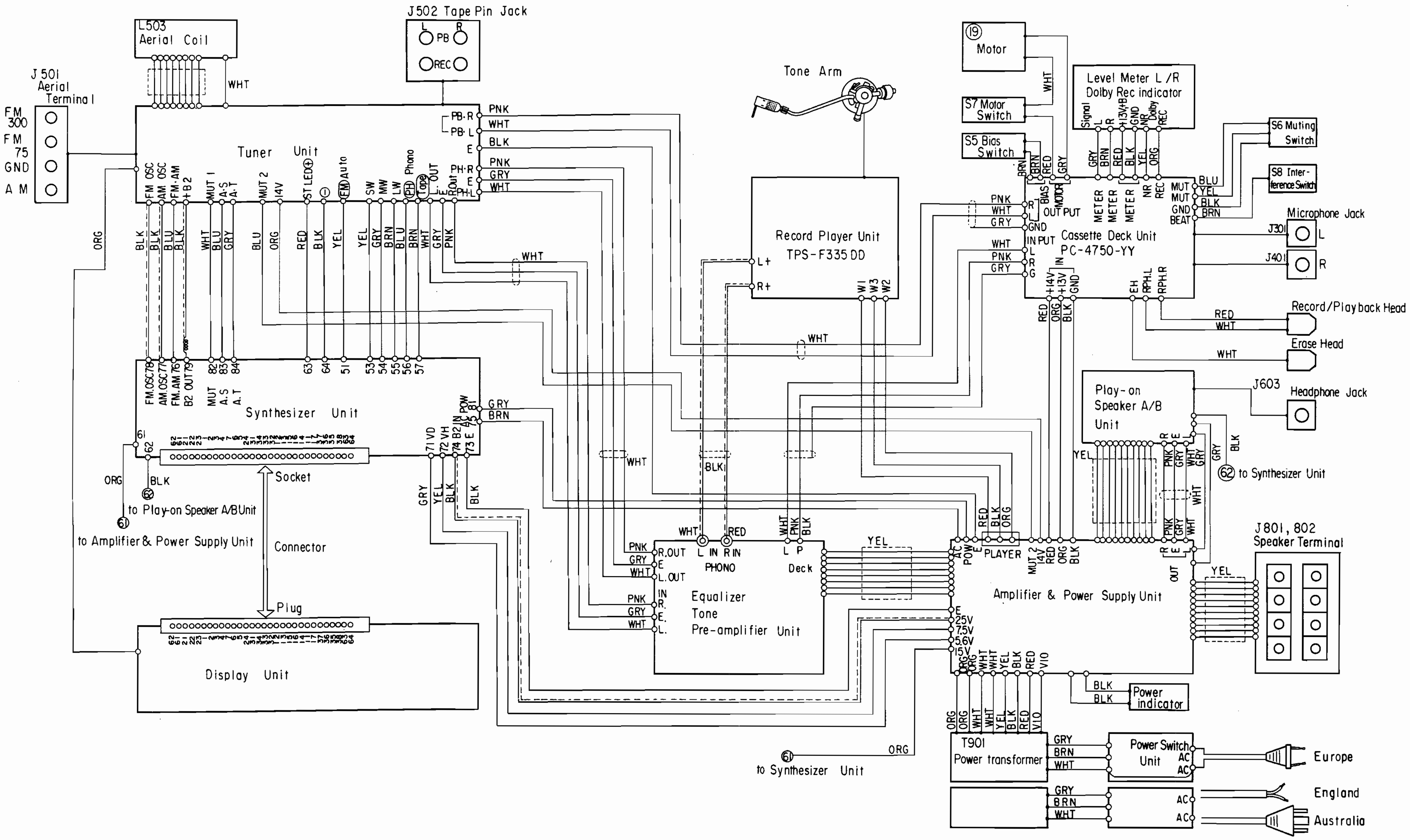

L503
Aerial Coil
J502 Tape Pin Jack
L R
PB
REC
J 501
Aerial
Terminal
FM 300
FM 75
GND
A M
WHT
Tuner Unit
PB·R
PB·L
E
PH·R
E
PH·L
PNK
WHT
BLK
PNK
GRY
WHT
FM OSC
AM OSC
FM·AM
+B2
MUT 1
A·S
A·T
MUT 2
14V
ST LED⊕
⊖
FM Auto
SW
MW
LW
PH Phono
Tape
L OUT
E
R Out
ORG
BLK
BLK
BLU
BLK
WHT
BLU
GRY
BLU
ORG
RED
BLK
YEL
YEL
GRY
BRN
BLU
BRN
WHT
GRY
PNK
WHT
Synthesizer Unit
FM.OSC78
AM.OSC77
FM.AM 76
B2 OUT79
MUT 82
A.S 83
A.T 84
63
64
51
53
54
55
56
57
POW 81
IN 75
71 VD
72 VH
74 B2
73 E
GRY
BRN
61
62
ORG
BLK
62
to Play-on Speaker A/B Unit
61
to Amplifier & Power Supply Unit
Socket
Connector
Plug
Display Unit
GRY
YEL
BLK
BLK
WHT
Tone Arm
Record Player Unit
TPS-F335DD
L+
R+
W1
W3
W2
WHT
BLK
WHT
RED
L IN R IN
PHONO
L P
Deck
WHT
PNK
BLK
PNK
GRY
WHT
R.OUT
E
L.OUT
PNK
GRY
WHT
IN
R.
E.
L.
Equalizer
Tone
Pre-amplifier Unit
YEL
19
Motor
WHT
S7 Motor
Switch
S5 Bias
Switch
Level Meter L/R
Dolby Rec indicator
Signal
L
R
+13V+B
GND
NR
Dolby
REC
GRY
BRN
RED
BLK
YEL
ORG
BRN
BRN
RED
GRY
BIAS
MOTOR
METER
METER
METER
NR
REC
MUT
MUT
GND
BEAT
BLU
YEL
BLK
BRN
S6 Muting
Switch
S8 Inter-
ference Switch
Microphone Jack
J301
L
J401
R
PNK
WHT
GRY
R
L
GND
OUT PUT
WHT
PNK
GRY
IN PUT
L
R
G
Cassette Deck Unit
PC-4750-YY
+14V
+13V
IN
GND
EH
RPH.L
RPH.R
RED
ORG
BLK
GRY
RED
WHT
Record/Playback Head
WHT
Erase Head
Play-on
Speaker A/B
Unit
J603
Headphone Jack
YEL
R
E
L
PNK
GRY
WHT
GRY
GRY
BLK
62
to Synthesizer Unit
WHT
RED
BLK
ORG
AC
POW
E
PLAYER
MUT 2
14V
RED
ORG
BLK
PNK
GRY
WHT
R
E
L
OUT
J801, 802
Speaker Terminal
YEL
Amplifier & Power Supply Unit
E
25V
7.5V
5.6V
15V
ORG
ORG
WHT
WHT
YEL
BLK
RED
VIO
BLK
BLK
Power
indicator
ORG
ORG
WHT
WHT
YEL
BLK
RED
VIO
T901
Power transformer
GRY
BRN
WHT
Power Switch
Unit
AC
AC
Europe
GRY
BRN
WHT
AC
AC
England
Australia
ORG
61
to Synthesizer Unit

Figure 39.

POWER SWITCH P.C. BOARD (TE, TU, AY)

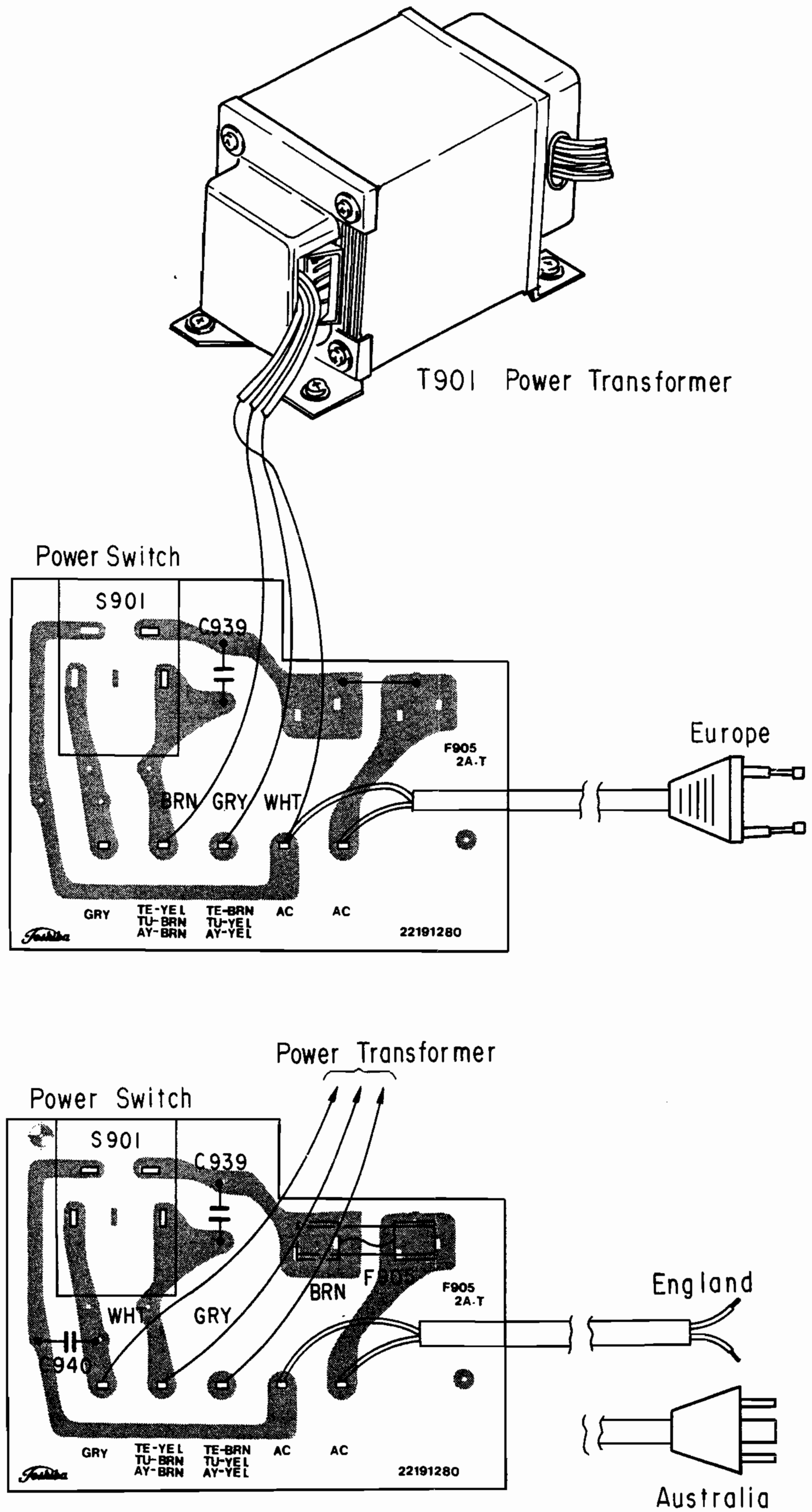

T901 Power Transformer
Power Switch
S901
C939
BRN
GRY
WHT
F905
2A-T
GRY
TE-YEL
TU-BRN
AY-BRN
TE-BRN
TU-YEL
AY-YEL
AC
AC
22191280
Europe
Power Transformer
Power Switch
S901
C939
C940
WHT
GRY
BRN
F905
F905
2A-T
England
Australia

Figure 40.

15. MECHANISM EXPLODED VIEW

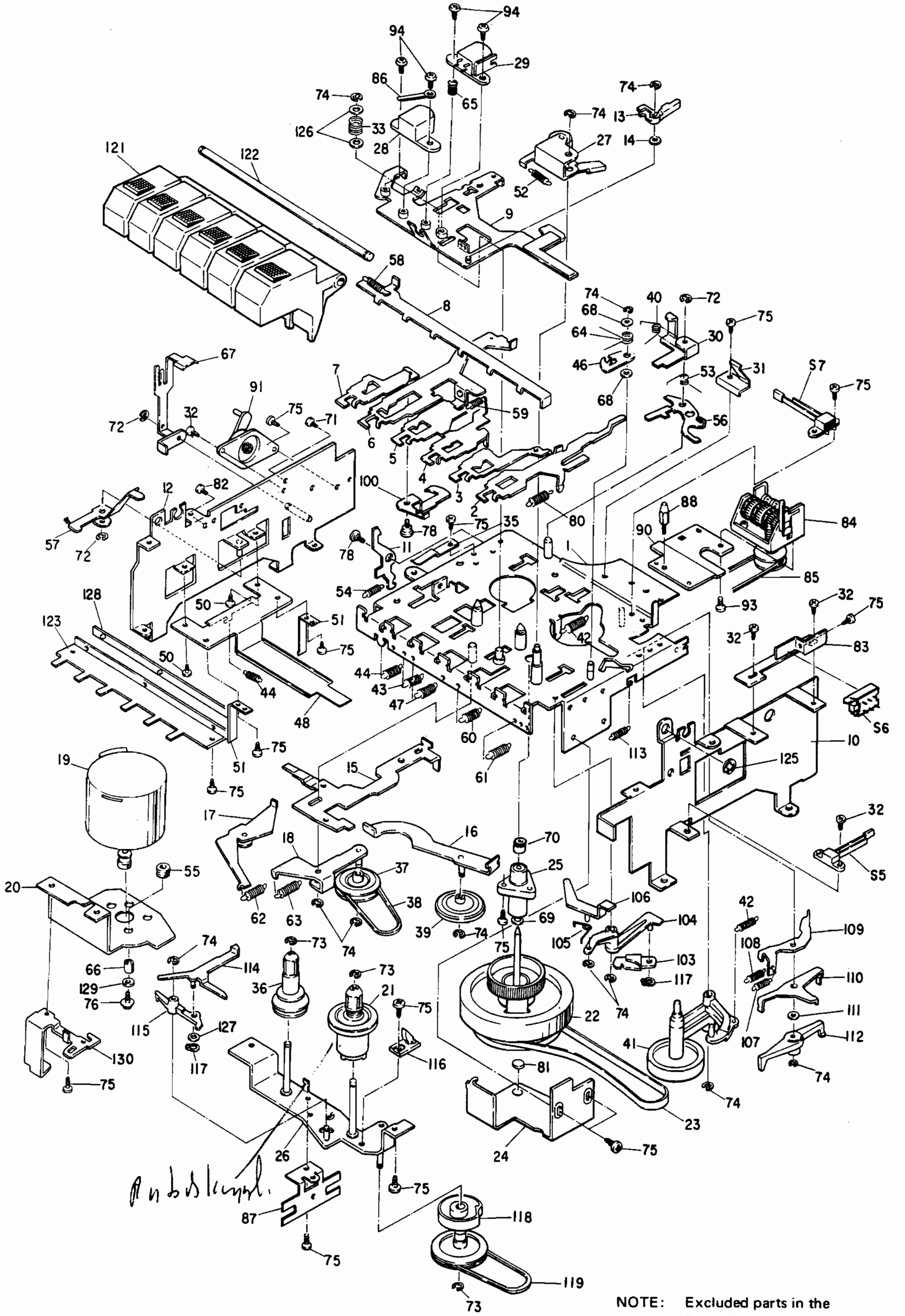

94
94
29
86
65
74
126
33
28
74
13
74
27
14
121
122
52
9
58
8
74
40
72
68
64
30
75
46
53
31
S7
75
67
91
7
59
68
56
72
32
75
71
6
5
12
82
100
4
3
88
84
57
72
78
78
11
75
35
80
90
85
128
54
50
51
42
93
32
75
123
75
32
83
50
44
44
43
47
48
60
113
10
S6
51
75
19
75
15
61
125
17
18
16
70
32
20
55
37
25
62
63
38
106
39
74
69
42
104
109
66
74
114
73
75
105
103
108
110
129
76
36
73
21
117
115
127
75
22
74
111
107
112
130
117
116
81
41
74
75
26
24
23
74
75
75
87
118
75
119
73
S5

Figure 41.

NOTE: Excluded parts in the Parts List are not available as replacement parts.

16. TURNTABLE EXPLODED VIEW

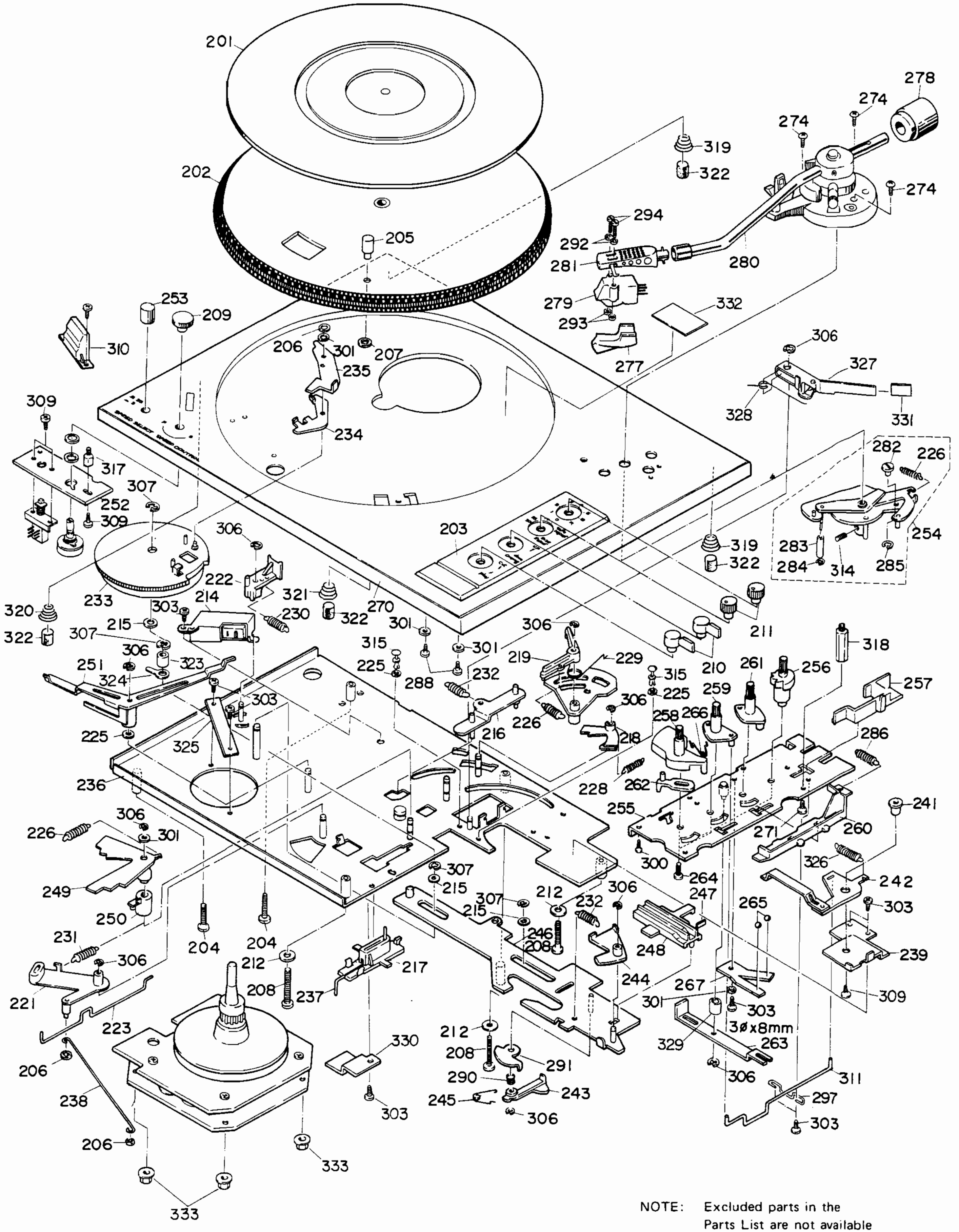
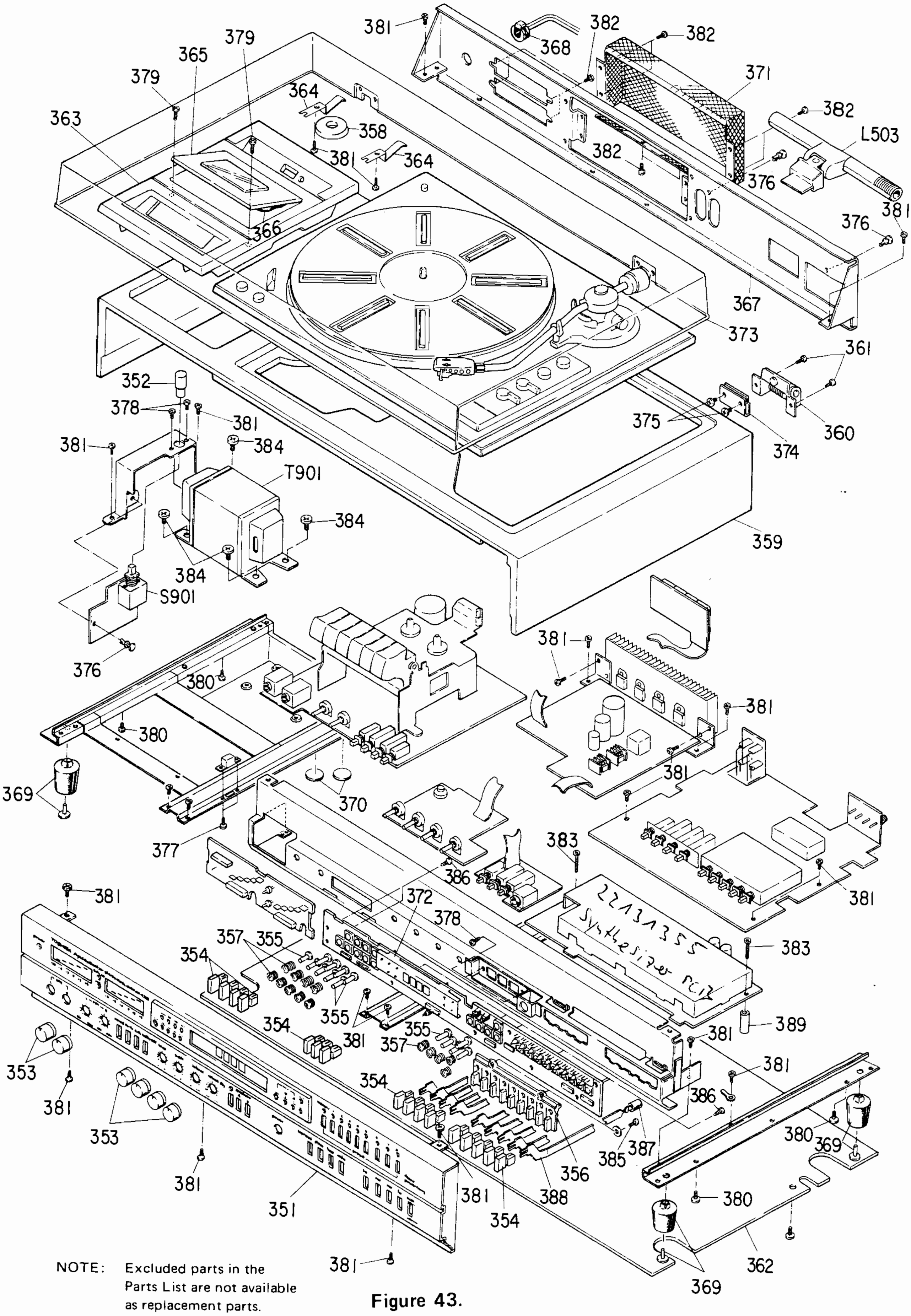

201
278
274
274
274
319
322
202
294
292
281
280
205
279
332
293
277
253
209
310
206
301
207
235
306
327
309
328
331
234
282
226
317
307
252
309
254
203
306
319
322
283
284
314
285
222
214
321
270
233
320
215
303
230
322
322
307
301
306
211
306
323
315
301
219
229
210
261
318
251
324
303
225
288
232
315
256
257
225
259
225
226
306
258
266
325
216
218
236
228
262
286
255
241
306
271
260
226
301
249
300
264
326
242
307
215
212
306
303
307
232
247
265
250
215
246
208
248
239
231
306
204
204
212
217
244
267
309
221
208
237
301
303
3ø x8mm
263
223
330
212
329
206
208
291
311
290
306
297
245
243
238
303
306
303
206
333
333

Figure 42.

NOTE: Excluded parts in the
Parts List are not available
as replacement parts.

17. CABINET EXPLODED VIEW


381
379
365
379
363
364
358
381
364
366
382
368
382
371
382
L503
382
376
381
376
367
373
361
360
374
375
359
352
378
381
381
384
T901
384
384
S901
376
381
380
380
381
381
369
370
377
383
386
381
372
22131355
Synthesizer PCB
378
383
381
357
355
354
389
381
355
354
381
355
357
381
353
381
354
386
353
380
369
387
385
356
381
381
388
380
351
354
381
362
369

NOTE: Excluded parts in the Parts List are not available as replacement parts.

Figure 43.

18. PARTS LIST

CONTENTS

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TE: Europe
TU: England
AY: Australia

RECEIVER SECTION

TRANSISTORS, ICS AND DIODES

TUNER SECTION

Symbol No.	Part No.	Description
Q501		Transistor, 2SC1923-O
Q503, 504, 505, 506, 508, 509		Transistor, 2SC1815-GR
Q507 510		Transistor, 2SA561-Y
IC501	22114626	IC, HA11211
IC502		IC, TA7624P
D501, 502, 504, 505, 509, 510, 511, 512		Diode, 1S1555V
D506, 507, 508		Diode, 1N60FD1

SYNTHESISZER SECTION

Symbol No.	Part No.	Description
IC201		IC, TD6102P
IC202		IC, TC9123P
IC203, 204		IC, TC5029P
IC205, 210		IC, TC4069P
IC206		IC, TC5501P
IC207	22114773	IC, TMP4315P-0202
IC208		IC, TC4019P
IC209		IC, TD62105P
IC211, 212		IC, TC5012P
Q201, 202, 203, 204		Transistor, 2SC1815-GR
Q205, 206, 207, 208		Transistor, 2SA509-Y
D201 to 216		Diode, 1S1555V

DISPLAY SECTION

Symbol No.	Part No.	Description
IC101		IC, TD34247AP
IC102		IC, TC4023BP
IC103		IC, TD62105P
D101 to 112		Diode, 1S1555V
D113 to 116,	22115499	Diode, AR2433D-RED
D119 to 127, 130 to 132, 135	22115499	Diode, AR2433D-RED
D117, 118	22115500	Diode, PR5531T-RED
D128, 129	22115501	Diode, PR5531T-GRN
D133, 134		Diode, TLG325-A, B, C D133 and D134 Neet to use the same rank.

AUDIO AND POWER SUPPLY SECTION

Symbol No.	Part No.	Description
Q701, 702	22114594	IC, NJM4558D-K
Q801, 803, 802, 804		Transistor, 2SA1015-GR
Q805, 806		Transistor, 2SC2229-Y
Q807, 808		Transistor, 2SC1627A-Y
Q809, 810		Transistor, 2SA817A-Y
Q811, 812		Transistor, 2SD716-O
Q813, 814		Transistor, 2SB686-O
Q901, 902, 903		Transistor, 2SD234-Y
Q904		IC, TA78L012P
Q905		Transistor, 2SC734-Y
D801, 802	22115481	Diode, STV-3H
D803		Diode, 1S1553V
D804		Diode, 02Z18A
D901	22115517	Diode, DS5BN-M
D902, 903	22115485	Diode, WL02M
D904, 905,		Diode, 02Z13A
D906, 907		Diode, 1S1555V
D908		Diode, 1S1885
D909, 911		Diode, 02Z15A
D910		Diode, 02Z5.6A
D912		Diode, 02Z8.2U
D913	22115510	Diode, GD4-203

ELECTRICAL PARTS

TUNER SECTION

Symbol No.	Part No.	Description
L501	22291082	Coil, FM Choke, 2.2μH
L502	22241036	Coil, FM Choke, 18μH
IT501	22264643	Transformer, IF, IT1106B, AM

RECEIVER SECTION

Symbol No.	Part No.	Description
IT502	22267349	Transformer, IF, IT1057349, FM
IT503	22264617	Transformer, IF, IT5617, AM
IT504	22264626	Transformer, IF, IT5477, AM
S501 to 504	22195268	Switch, Push, Function MONI/PHONO/TAPE/RADIO
S505 to 509	22195369	Switch, Push LW/MW/SW/FM/MODE
CF501, 502	22153107	Filter, Ceramic, 10.7MHz
J501	22162437	Terminal, S-4P, Aerial
J502	22163671	Jack, US-4P, Tape
	22131351	FM Front End
	22131352	AM 3 Band Tuner, with Switch
SYNTHESISZER SECTION		
L201, 203	22291082	Coil, FM Choke, 2.2μH
L202	22232204	Coil, Choke, 1mH
L204, 205	22230106	Coil, Choke, 470μH
Z201	22153069	Crystal, HC-43/U-6400
J201	22161627	Connector, 15P Socket (15P 2 used)
DISPLAY SECTION		
S101 to 123	22195145	Switch, Key
J101	22161628	Connector, 15P Plug (15P 2 used)
AUDIO AND POWER SUPPLY SECTION		
T902	22148648	Relay Switch, Power ON OFF
F901, 902	22144293	Fuse, 1.6AT/250V
F903, 904	22144285	Fuse, 5AT/250V
F905	22144378	Fuse, 2AT/250V (TU, AY)
	22165076	Fuse Holder (TU, AY)
	22165047	Fuse Holder
J701	22163529	Pin Jack, Red, Right
J702	22163506	Pin Jack, White, Left
OTHERS		
L503	22242736	Coil, Aerial, FD56D-2736
T901	22223262	Transformer, Power
S801	22195269	Switch, Push, Speaker Select/Play
S901	22195226	Switch, Push, Power (TE)
	22146295	Switch, Push, Power (TU, AY)
J801, 802	22162424	Terminal, Speaker
J803	22163676	Jack, Headphone
	22176286	Power Cord, E2ES (TE)
	22176536	Power Cord, BS (TU)
	22176489	Power Cord, A3SA (AY)

CAPACITOR

D = ±0.5pF, J = ±5%, K = ±10%, M = ±20%, $Z = ^{+80}_{-20}\%$

RECEIVER SECTION

Symbol No.	Part No.	Description
TUNER SECTION		
C501	22342223	Ceramic, 0.022mfd, 50V, Z
C502	22342223	Ceramic, 0.022mfd, 50V, Z
C503	22342223	Ceramic, 0.022mfd, 50V, Z
C504	22342223	Ceramic, 0.022mfd, 50V, Z
C505	22342223	Ceramic, 0.022mfd, 50V, Z
C506	22349471	Ceramic, 470pF, 50V, K
C507	22342223	Ceramic, 0.022mfd, 50V, Z
C508	22342223	Ceramic, 0.022mfd, 50V, Z
C509	22342223	Ceramic, 0.022mfd, 50V, Z
C510	22342473	Ceramic, 0.047mfd, 50V, Z
C511	22342473	Ceramic, 0.047mfd, 50V, Z
C512	22342223	Ceramic, 0.022mfd, 50V, Z
C513	22342473	Ceramic, 0.047mfd, 50V, Z
C514	22448109	Electrolytic, 1mfd, 50V
C517	22342223	Ceramic, 0.022mfd, 50V, Z
C518	22342473	Ceramic, 0.047mfd, 50V, Z
C519	22445470	Electrolytic, 47mfd, 16V
C520	22445221	Electrolytic, 220mfd, 16V
C521	22445221	Electrolytic, 220mfd, 16V
C522	22448478	Electrolytic, 0.47mfd, 50V
C523	22342473	Ceramic, 0.047mfd, 50V, Z
C524	22349331	Ceramic, 330pF, 50V, K
C525	22448339	Electrolytic, 3.3mfd, 50V
C526	22448339	Electrolytic, 3.3mfd, 50V
C527	22371103	Mylar, 0.01mfd, 50V, J
C528	22371103	Mylar, 0.01mfd, 50V, J
C529	22448109	Electrolytic, 1mfd, 50V
C530	22448339	Electrolytic, 3.3mfd, 50V
C531	22448109	Electrolytic, 1mfd, 50V
C532	22371103	Mylar, 0.01mfd, 50V, J
C533	22342223	Ceramic, 0.022mfd, 50V, Z
C534	22371103	Mylar, 0.01mfd, 50V, J
C535	22371103	Mylar, 0.01mfd, 50V, J
C536	22371103	Mylar, 0.01mfd, 50V, J
C538	22361330	Ceramic, 33pF, 50V, J
C539	22448109	Electrolytic, 1mfd, 50V
C540	22349472	Ceramic, 0.0047mfd, 50V, K
C541	22371153	Mylar, 0.015mfd, 50V, J
C542	22371153	Mylar, 0.015mfd, 50V, J
C543	22447479	Electrolytic, 4.7mfd, 35V
C544	22349471	Ceramic, 470pF, 50V, K
C545	22349471	Ceramic, 470pF, 50V, K
C546	22445100	Electrolytic, 10mfd, 16V
C547	22445100	Electrolytic, 10mfd, 16V
C548	22445470	Electrolytic, 47mfd, 16V
C549	22321053	Polypropylene, 470pF, 50V, J
C550	22371332	Mylar, 0.0033mfd, 50V, J
C551	22371332	Mylar, 0.0033mfd, 50V, J
C552	22371222	Mylar, 0.0022mfd, 50V, J
C553	22371222	Mylar, 0.0022mfd, 50V, J
C554	22448109	Electrolytic, 1mfd, 50V

RECEIVER SECTION

Symbol No.	Part No.	Description
C555	22371103	Mylar, 0.01mfd, 50V, J
C556	22447479	Electrolytic, 4.7mfd, 35V
C557	22448109	Electrolytic, 1mfd, 50V
C558	22342223	Ceramic, 0.022mfd, 50V, Z
C559	22362151	Ceramic, 150pF, 50V, K
C560	22371333	Mylar, 0.033mfd, 50V, J
C561	22447479	Electrolytic, 4.7mfd, 35V
C562	22362680	Ceramic, 68pF, 50V, K
C563	22342223	Ceramic, 0.022mfd, 50V, Z
C564	22371153	Mylar, 0.015mfd, 50V, J
C565	22371153	Mylar, 0.015mfd, 50V, J
C566	22448478	Electrolytic, 0.47mfd, 50V
C567	22447479	Electrolytic, 4.7mfd, 35V
SYNTHESISZER SECTION		
C201	22342223	Ceramic, 0.022mfd, 50V, Z
C202	22342223	Ceramic, 0.022mfd, 50V, Z
C203	22362330	Ceramic, 33pF, 50V, K
C204	22362151	Ceramic, 150pF, 50V, K
C205	22342223	Ceramic, 0.022mfd, 50V, Z
C206	22342223	Ceramic, 0.022mfd, 50V, Z
C207	22349221	Ceramic, 220pF, 50V, K
C208	22448478	Electrolytic, 0.47mfd, 50V
C209	22443470	Electrolytic, 47mfd, 10V
C210	22342223	Ceramic, 0.022mfd, 50V, Z
C211	22371103	Mylar, 0.01mfd, 50V, J
C212	22342103	Ceramic, 0.01mfd, 50V, Z
C213	22442331	Electrolytic, 330mfd, 6.3V
C214	22442331	Electrolytic, 330mfd, 6.3V
C215	22342223	Ceramic, 0.022mfd, 50V, Z
C216	22443102	Electrolytic, 1000mfd, 10V
C217	22442471	Electrolytic, 470mfd, 6.3V
C218	22448339	Electrolytic, 3.3mfd, 50V
C219	22362680	Ceramic, 68pF, 50V, K
C220	22349121	Ceramic, 120pF, 50V, K
C221	22349121	Ceramic, 120pF, 50V, K
C222	22442331	Electrolytic, 330mfd, 6.3V
C223	22448229	Electrolytic, 2.2mfd, 50V
C224	22342223	Ceramic, 0.022mfd, 50V, Z
C225	22342223	Ceramic, 0.022mfd, 50V, Z
C226	22342223	Ceramic, 0.022mfd, 50V, Z
C228	22443331	Electrolytic, 330mfd, 10V
C229	22442471	Electrolytic, 470mfd, 6.3V
DISPLAY SECTION		
C101	22443101	Electrolytic, 100mfd, 10V
C102	22342223	Ceramic, 0.022mfd, 50V, Z
C103	22342223	Ceramic, 0.022mfd, 50V, Z
AUDIO AND POWER SUPPLY SECTION		
C701, 702	22447479	Electrolytic, 4.7mfd, 35V

RECEIVER SECTION

Symbol No.	Part No.	Description
C705, 706	22445470	Electrolytic, 47mfd, 16V
C707, 708	22371822	Mylar, 0.0082mfd, 50V, J
C709, 710	22371222	Mylar, 0.0022mfd, 50V, J
C711, 712	22447479	Electrolytic, 4.7mfd, 35V
C713, 714	22371102	Mylar, 0.001mfd, 50V, J
C715, 716	22349101	Ceramic, 100pF, 50V, K
C717, 718	22447479	Electrolytic, 4.7mfd, 35V
C721, 722	22371153	Mylar, 0.015mfd, 50V, J
C723, 724	22371683	Mylar, 0.068mfd, 50V, J
C725, 726	22447100	Electrolytic, 10mfd, 35V
C727, 728	22371332	Mylar, 0.0033mfd, 50V, J
C729, 730	22371223	Mylar, 0.022mfd, 50V, J
C731, 732	22448109	Electrolytic, 1mfd, 50V
C801, 802	22447479	Electrolytic, 4.7mfd, 35V
C803, 804	22349681	Ceramic, 680pF, 50V, K
C805, 806	22443101	Electrolytic, 100mfd, 10V
C807, 808	22361509	Ceramic, 5pF, 50V, D
C809, 810	22361100	Ceramic, 10pF, 50V, D
C811, 812	22447470	Electrolytic, 47mfd, 35V
C813, 814	22371683	Mylar, 0.068mfd, 50V, J
C815	22371104	Mylar, 0.1mfd, 50V, J
C817, 818	22448479	Electrolytic, 4.7mfd, 50V
C819	22448479	Electrolytic, 4.7mfd, 50V
C820	22448470	Electrolytic, 47mfd, 50V
C905	22342223	Ceramic, 0.022mfd, 50V, J
C906	22342223	Ceramic, 0.022mfd, 50V, J
C907	22342223	Ceramic, 0.022mfd, 50V, J
C908	22342223	Ceramic, 0.022mfd, 50V, J
C909	22342223	Ceramic, 0.022mfd, 50V, J
C910	22342223	Ceramic, 0.022mfd, 50V, J
C911	22342223	Ceramic, 0.022mfd, 50V, J
C912	22342223	Ceramic, 0.022mfd, 50V, J
C913, 914	22430075	Electrolytic, 6800mfd, 42V
C915	22445101	Electrolytic, 100mfd, 16V
C916	22445101	Electrolytic, 100mfd, 16V
C917	22445101	Electrolytic, 100mfd, 16V
C918	22445101	Electrolytic, 100mfd, 16V
C919	22440269	Electrolytic, 2200mfd, 50V
C920	22446101	Electrolytic, 100mfd, 25V
C921	22445101	Electrolytic, 100mfd, 16V
C922	22445101	Electrolytic, 100mfd, 16V
C923	22445471	Electrolytic, 470mfd, 16V
C933	22445102	Electrolytic, 1000mfd, 16V
C934	22443101	Electrolytic, 100mfd, 10V
C935	22340032	Ceramic, 0.02mfd, 500V, Z
C937	22349681	Ceramic, 680pF, 50V, K
C938	22443102	Electrolytic, 1000mfd, 10V
C939	22340108	Ceramic, 4700pF, AC400V (TE)
C939, 940	22340109	Ceramic, 4700pF, AC400V (TU, AY)
C943	22340032	Ceramic, 0.02mfd, 500V
C944	22447330	Electrolytic, 33mfd, 35V

RECEIVER SECTION

Symbol No.	Part No.	Description
RESISTORS **All resistors carbon film ¼W, ±5%, unless otherwise noted.** **K = 1,000, M = 1,000,000**		
TUNER SECTION		
R501	22555682	6.8K ohm
R502	22555682	6.8K ohm
R503	22555101	100 ohm
R504	22555331	330 ohm
R505	22555101	100 ohm
R506	22555332	3.3K ohm
R507	22555223	22K ohm
R508	22555102	1K ohm
R509	22555331	330 ohm
R510	22555154	150K ohm
R511	22555331	330 ohm
R512	22555154	150K ohm
R514	22555560	56 ohm
R516	22555333	33K ohm
R517	22555333	33K ohm
R518	22555473	47K ohm
R519	22555333	33K ohm
R520	22555562	5.6K ohm
R521	22545103	10K ohm
R522	22555123	12K ohm
R523	22555563	56K ohm
R524	22500130	10 ohm, ¼W, Fuseable
R525	22555222	2.2K ohm
R526	22555103	10K ohm
R527	22555103	10K ohm
R528	22555472	4.7K ohm
R529	22555272	2.7K ohm
R530	22555101	100 ohm
R531	22555103	10K ohm
R532	22555334	330K ohm
R533	22545823	82K ohm
R534	22545102	1K ohm
R535	22555103	10K ohm
R536	22555473	47K ohm
R537	22555333	33K ohm
R538	22555333	33K ohm
R539	22555102	1K ohm
R540	22555562	5.6K ohm
R541	22545563	56K ohm
R542	22555683	68K ohm
R543	22555683	68K ohm
R544	22555271	270 ohm
R545	22563152	1.5K ohm, ½W
R547	22555822	8.2K ohm
R548	22555102	1K ohm
R549	22555332	3.3K ohm
R550	22555332	3.3K ohm
R551	22555334	330K ohm, TA7624P GRN
	22555684	680K ohm, TA7624P RED
R552	22545561	560 ohm
R553	22545272	2.7K ohm
R554	22555103	10K ohm
R555	22555103	10K ohm
R556	22555561	560 ohm
R557	22555562	5.6K ohm
R558	22545333	33K ohm
R559	22545333	33K ohm
R560	22555103	10K ohm
R561	22555103	10K ohm
R562	22555562	5.6K ohm
R563	22555332	3.3K ohm
R564	22555683	68K ohm
R565	22555683	68K ohm
R566	22555332	3.3K ohm
R567	22555153	15K ohm
R568	22555473	47K ohm
R569	22555123	12K ohm
R570	22555682	6.8K ohm
R571	22555563	56K ohm
R572	22555104	100K ohm
R573	22555104	100K ohm
R574	22555563	56K ohm
R576	22555103	10K ohm
R577	22555104	100K ohm
R578	22555103	10K ohm
R579	22555334	330K ohm
R580	22555103	10K ohm
R581	22555154	150K ohm
R582	22555102	1K ohm
R583	22555102	1K ohm
R584	22555102	1K ohm
R585	22555123	12K ohm
R586	22555563	56K ohm
R587	22555224	220K ohm
R588	22555101	100 ohm
VR501	22658463	10K ohm, B, Semi-fixed Variable
SYNTHESISZER SECTION		
R201	22555102	1K ohm
R202	22555103	10K ohm
R203	22555123	12K ohm
R204	22555102	1K ohm
R205	22555564	560K ohm
R206	22555102	1K ohm
R207	22555562	5.6K ohm
R208	22555103	10K ohm
R209	22555103	10K ohm
R210	22555103	10K ohm
R211	22555154	150K ohm
R212	22555473	47K ohm

RECEIVER SECTION

Symbol No.	Part No.	Description
R213	22555103	10K ohm
R214	22555223	22K ohm
R215	22555223	22K ohm
R216	22555103	10K ohm
R217	22555272	2.7K ohm
R218	22555473	47K ohm
R219	22555153	15K ohm
R220	22555103	10K ohm
R221	22555392	3.9K ohm
R222	22555333	33K ohm
R223	22555105	1M ohm
R224	22555104	100K ohm
R225	22555223	22K ohm
R226	22555393	39K ohm
R227	22555472	4.7K ohm
R228	22555103	10K ohm
R229	22555563	56K ohm
R230	22555470	47 ohm
R231	22555470	47 ohm
R232	22555470	47 ohm
R233	22555470	47 ohm
R234	22555101	100 ohm
R235	22555101	100 ohm
R236	22555101	100 ohm
R237	22555101	100 ohm
R238	22555333	33K ohm
R240	22545153	15K ohm
R241	22545153	15K ohm
R242	22545153	15K ohm
R243	22545153	15K ohm
R244	22545472	4.7K ohm
RR201	22540267	4.7K ohm x 9, Network, C = Common
RR202	22540270	10K ohm x 7, Network, I = Individual
RR203	22540270	10K ohm x 7, Network, I
RR204	22540268	33K ohm x 12, Network, C
RR205	22540357	33K ohm x 8, Network, C
RR206	22540262	68K ohm x 4, Network, C
RR207	22540266	10K ohm x 7, Network, C
RR208	22540263	100K ohm x 4, Network, C
RR209	22540270	10K ohm x 7, Network, C
RR210	22540264	22K ohm x 10, Network, C
DISPLAY SECTION		
R101	22545152	1.5K ohm
		I = Individual, C = Common
RR101	22540269	100 ohm x 7, Network, I
RR102	22540269	100 ohm x 7, Network, I
RR103	22540265	47K ohmx 7, Network, C
RR104	22540358	47K ohm x 4, Network, I

RECEIVER SECTION

Symbol No.	Part No.	Description
AUDIO AND POWER SUPPLY SECTION		
R701, 702	22555222	2.2K ohm
R703, 704	22555473	47K ohm
R705, 706	22555394	390K ohm
R707, 708	22555333	33K ohm
R709, 710	22555473	47K ohm
R711, 712	22555681	680 ohm
R713, 714	22555102	1K ohm
R715, 716	22555102	1K ohm
R719, 720	22555563	56K ohm
R721, 722	22545223	22K ohm
R725, 726	22545472	4.7K ohm
R727, 728	22545681	680 ohm
R731, 732	22545102	1K ohm
R733, 734	22555474	470K ohm
VR701	22651494	250K ohm, B, Variable, Volume
VR702	22651495	250K ohm, MN, Variable, Balance
VR703, 704	22651496	100K ohm, C, Variable, Bass & Treble
R801, 802	22545222	2.2K ohm
R803, 804	22555563	56K ohm
R805, 806	22555152	1.5K ohm
R807, 808	22545153	15K ohm
R809, 810	22545222	2.2K ohm
R811, 812	22545473	47K ohm
R813, 814	22555392	3.9K ohm
R815, 816	22555272	2.7K ohm
R817, 818	22570264	150 ohm, 1W, Metal
R819, 820	22500187	0.47 ohm, 3W, Wire Wound
R821, 822	22500187	0.47 ohm, 3W, Wire Wound
R823, 824	22570250	10 ohm, 1W, Metal Film
R825, 826	22570268	330 ohm, 1W, Metal Oxided Film
R827	22570321	1.5K ohm, 2W, Metal Oxided Film
VR801, 802	22658187	330 ohm, Semi-fixed Variable
R901	22570275	1.2K ohm, 1W, Metal Oxided Film
R902	22570275	1.2K ohm, 1W, Metal Oxided Film
R903	22545222	2.2K ohm
R904	22500120	560 ohm, ¼W, Fusible
R905	22500182	390 ohm, ¼W, Fusible
R906	22555472	4.7K ohm
R907	22555563	56K ohm
R908	22555682	6.8K ohm
R909	22570266	220 ohm, 1W, Metal Oxided Film
R910	22500118	27 ohm, ¼W, Fusible
R911	22570312	270 ohm, 2W, Metal Oxided Film
R912	22555101	100 ohm
R913	22555101	100 ohm
R914	22570522	27 ohm, 3W, Metal Film
R915	22555821	820 ohm
R916	22545681	680 ohm

CASSETTE RECORDER SECTION

Symbol No.	Part No.	Description
CASSETTE RECORDER SECTION		
TRANSISTORS, DIODES AND ICS		
Q01	22114624	IC, HA11226
Q02		IC, TA7318P
Q301, 401, 302, 402		Transistor, 2SC1681-BL
Q303, 403, 304, 404		Transistor, 2SC733
Q305, 405	22114634	IC, M51903L
D01, 02	22115499	Diode, AR2433D-RED
D301, 401		Diode, 1N60-FD1
D302, 402		Diode, 1S1555V
D303, 403, 304, 404, 305, 405		Diode, TLG205(GRN)
D306, 406, 307, 407		Diode, TLR205(RED)
ELECTRICAL PARTS		
S1, 2, 3, 4	22195297	Switch, Tape Select/Dolby NR
S5, 7	22145985	Switch, Leaf, Bias/Motor
S6	22146265	Switch, Slide, Muting
S8	22195048	Switch, Slide, Beat Cut
S301, 401	22195059	Switch, Slide, Record/Playback
L301, 401	22232207	Coil, Trap (2.2mH)
L302, 402	22232203	Coil, Trap (22mH)
J301, 401	22163733	Jack, Microphone (6ϕ)
Z01	22132524	Bias Unit, Oscillator
Z301, 401	22153075	Filter, Dolby
CAPACITORS J = ±5%, K = ±10%		
C01	22380100	Polystyrene, 3300pF, K, 200V
C02	22380121	Polystyrene, 820pF, K, 200V
C03	22445330	Electrolytic, 33mfd, 16V
C04	22445101	Electrolytic, 100mfd, 16V
C05	22443331	Electrolytic, 330mfd, 10V
C06	22445100	Electrolytic, 10mfd, 16V
C07	22440209	Electrolytic, 0.47mfd, 50V
C08	22445100	Electrolytic, 10mfd, 16V
C301, 401	22349221	Ceramic, 220pF, K, 50V
C302, 402	22445100	Electrolytic, 10mfd, 16V
C303, 403	22349561	Ceramic, 560pF, K, 50V
C304, 404	22362470	Ceramic, 47pF, K, 50V
C305, 405	22349102	Ceramic, 1000pF, K, 50V
C306, 406	22445101	Electrolytic, 100mfd, 16V
C307, 407	22448339	Electrolytic, 3.3mfd, 50V
C308, 408	22349102	Ceramic, 1000pF, K, 50V
C309, 409	22448339	Electrolytic, 3.3mfd, 50V

CASSETTE RECORDER SECTION

Symbol No.	Part No.	Description
C310, 410	22445100	Electrolytic, 10mfd, 16V
C311, 411	22371273	Mylar, 0.027mfd, J, 50V
C312, 412	22349221	Ceramic, 220pF, K, 50V
C313, 413	22445100	Electrolytic, 10mfd, 16V
C314, 414	22445100	Electrolytic, 10mfd, 16V
C315, 415	22445100	Electrolytic, 10mfd, 16V
C316, 416	22445100	Electrolytic, 10mfd, 16V
C317, 417	22445100	Electrolytic, 10mfd, 16V
C318, 418	22371153	Mylar, 0.015mfd, J, 50V
C319, 419	22371472	Mylar, 4700pF, J, 50V
C320, 420	22372562	Mylar, 0.0056mfd, K, 50V
C321, 421	22440209	Electrolytic, 0.47mfd, 50V
C322, 422	22371153	Mylar, 0.015mfd, J, 50V
C323, 423	22440208	Electrolytic, 0.33mfd, 50V
C324, 424	22445330	Electrolytic, 33mfd, 16V
C325, 425	22448339	Electrolytic, 3.3mfd, 50V
C326, 426	22440207	Electrolytic, 0.1mfd, 50V
C327, 427	22445100	Electrolytic, 10mfd, 16V
C328, 428	22371473	Mylar, 0.047mfd, J, 50V
C329, 429	22445100	Electrolytic, 10mfd, 16V
C330, 430	22349102	Ceramic, 0.001mfd, K, 50V
C331, 431	22440207	Electrolytic, 0.1mfd, K, 50V
C332, 432	22349151	Ceramic, 150pF, K, 50V
C333, 433	22440208	Electrolytic, 0.33mfd, 50V
C334, 434	22440207	Electrolytic, 0.1mfd, 50V
C335, 435	22371223	Mylar, 0.022mfd, J, 50V
C336, 436	22440299	Electrolytic, 10mfd, 16V
C337, 437	22440284	Electrolytic, 0.22mfd, 50V
RESISTORS **Resistors are ¼W, ±5% unless otherwise noted.**		
R01	22547561	560 ohm, ½W
R02	22547391	390 ohm, ½W
R03	22547151	150 ohm, ½W
R04	22547101	100 ohm, ½W
R05	22547101	100 ohm, ½W
R07	22547561	560 ohm, ½W
R08	22547102	1K ohm, ½W
R09	22547561	560 ohm, ½W
R301, 401	22545100	10 ohm
R302, 402	22545563	56K ohm
R303, 403	22541124	120K ohm, Noiseless
R304, 404	22541154	150K ohm, Noiseless
R305, 405	22541104	100K ohm, Noiseless
R308, 408	22555569	5.6 ohm
R310, 410	22545392	3.9K ohm
R312, 412	22545681	680 ohm
R313, 413	22545681	680 ohm
R314, 414	22545681	680 ohm
R315, 415	22545102	1K ohm
R316, 416	22545102	1K ohm
R317, 417	22545100	10 ohm

CASSETTE RECORDER SECTION

Symbol No.	Part No.	Description
R319, 419	22547101	100 ohm, ½W
VARIABLE RESISTORS		
R06	22658463	10K ohm, Semi-fixed
R306, 406	22625415	50K ohm, Variable, Volume
R307, 407	22658464	50K ohm, Semi-fixed
R309, 409	22658464	50K ohm, Semi-fixed
R311, 411	22658485	2K ohm, Semi-fixed
R318, 418	22658465	100K ohm, Semi-fixed
MECHANICAL PARTS (PC–4750)		
2	25719192	Operation Plate, Pause
3	25741463	Operation Plate, Fast-forward
4	25741461	Operation Plate, Play
5	25741474	Operation Plate, Rewind
6	25741464	Operation Plate, Record
7	25741465	Operation Plate, Stop/Eject
8	25741487	Slider, Lock
13	25782221	Lever, Waiting
14	25764476	Washer, Waiting Lever
16	25713369	Slider Ass'y, Fast-forward
17	25742594	Lever, Fast-forward
18	25713284	Lever Ass'y, Rewind
19	25719573	Motor Ass'y
21	25712328	Hub Plate, Take-up
22	25717382	Flywheel Ass'y
23	25755370	Belt, Drive
25	25718175	Holder, Capstan
27	25717379	Pressuee Roller Ass'y
28	22218186	Head, Erase (HET-28)
29	22217317	Head, Record/Playback (HRPT-54)
30	25748097	Lever, Record Lock
31	25774533	Spring, Cassette Holder
32	22707350	Screw, 2.6ø x 5mm
33	25772397	Spring, Head Chassis
34	25771759	Spring, Lock Lever
36	25712300	Hub Plate, Supply
37	25713455	Pulley Ass'y, Rewind
38	25755330	Belt, Rewind
39	25713400	Idler Ass'y, Fast-forward
40	25773259	Spring, Record Lock Lever
41	25713447	Lever Ass'y, Take-up
42	25771450	Spring, Take-up Lever
43	25771650	Spring, Eject
44	25771403	Spring, Record Slider
46	25742576	Lever, Pause Lock
47	25771405	Spring, Operation Plate, Rewind
50	22707018	Screw, 2.6ø x 6.8mm
52	25771704	Spring, Pressure Roller
53	25773260	Spring, Record Lock Lever
54	25771412	Spring, Cassette-up

CASSETTE RECORDER SECTION

Symbol No.	Part No.	Description
55	25761238	Cushion, Motor
56	25748216	Lever, Record Lock
58	25771588	Spring, Lock Slider
59	25771672	Spring, Head Chassis
60	25771671	Spring, Operation Plate, Play
61	25771407	Spring, Operation Plate, FF
62	25771578	Spring, Fast-forward Lever
63	25771451	Spring, Rewind Lever
64	25773295	Spring, Pause Lock
65	25772240	Spring, Head
66	25733463	Spacer, Motor
68	25764400	Washer, Pause Lock
69	25764398	Washer, Flywheel
70	25756143	Gear, Waiting
71	22701389	Screw, 2.6ø x 3mm
73	25735159	E Ring, 1.5ø
74	22703118	E Ring, 2ø
75	22707151	Screw, 2.6ø x 5mm
78	22701472	Screw, 2.6ø x 13mm
80	25771585	Spring, Operation Plate, Pause
81	25764386	Washer, Flywheel
82	22701327	Screw (BID), 2.6ø x 4mm
84	25873180	Tape Counter
85	25755285	Belt, Tape Counter
91	25719392	Damper Ass'y
93	22701321	Screw (BID), 3ø x 6mm
94	22707451	Screw (BID), 2ø x 5mm
103	25782184	Lever, ASO
104	25782186	Lever, Release
105	25773215	Spring, ASO Select
107	25771584	Spring, Pause Lever
108	25771617	Spring, Pause Lever
111	25764399	Washer, Stop Lever
112	25782185	Lever, Bias
113	25771586	Spring, ASO Lever
114	25782182	Lever, Detect
115	25782183	Lever, Push
116	25781173	Guide, Detect Lever
117	25735197	G Ring, 2.5ø
118	25713401	Cam-wheel Ass'y
119	25755267	Belt, Cam
121	25837031	Button, Operation
124	25771518	Spring, Button
126	25764360	Washer, Head Chassis
127	25761340	Spacer, Push Lever
128	25761268	Cushion, Button

TURNTABLE SECTION

Symbol No.	Part No.	Description
TURNTABLE SECTION (TPS–F335DD)		
TRANSISTORS, DIODES AND ICS		
Q01, 02	22114393	Transistor, 2SC458LGC
Q04, 06, 08	22114501	Transistor, 2SD468-B
Q05, 07, 09	22114541	Transistor, 2SB562-B
D01, 02, 03, 08	22115381	Diode, 1S2075K
D04, 05, 06, 07		Diode, 1S1885
ZD01, 02	22115495	Diode, HZ11-A
ZD03, 04, 05	22115494	Diode, HZ6-B
Z01, 02	22114470	IC, NJM4558D
ELECTRICAL PARTS		
S1	22146144	Switch, Micro, Power
S2	22146194	Switch, Push, Speed Select
T1	22223281	Transformer, Power
P1	22113437	Lamp, Neon, Stroboscope
	22164807	Cord, PIN Plug
F01, 02	22144295	Fuse, 0.5A/250V
CAPACITORS **K = ±10%, P = –0+100%**		
C1	22360265	Ceramic, 0.01mfd, P, 500V
C01	22443101	Electrolytic, 100mfd, 10V
C02	22372472	Mylar, 0.0047mfd, K, 50V
C04	22371224	Mylar, 0.02mfd, J, 50V
C05	22445100	Electrolytic, 10mfd, 16V
C07	22372154	Mylar, 0.15mfd, K, 50V
C08, 09	22372223	Mylar, 0.022mfd, K, 50V
C10, 11	22372473	Mylar, 0.047mfd, K, 50V
C12, 13	22446102	Electrolytic, 1000mfd, 25V
C14	22360265	Ceramic, 0.01mfd, P, 500V
RESISTORS **Resistors are ¼W, ±5% unless otherwise noted.**		
R00	22555121	120 ohm
R01	22555331	330 ohm
R02, 03	22555682	6.8K ohm
R04	22550151	750 ohm, ±2%
R05	22555333	33K ohm
R06	22555682	6.8K ohm
R07	22555104	100K ohm
R08	22555562	5.6K ohm
R09	22555392	3.9K ohm
R10	22555274	270K ohm
R11	22555823	82K ohm
R12	22555154 22555154	150K } 75K ohm 150K

TURNTABLE SECTION

Symbol No.	Part No.	Description
R13	22555224	220K ohm
R14	22555154	150K ohm
R17, 20	22555225	2.2M ohm
R18, 21	22555392	3.9K ohm
R19	22555394	390K ohm
R22	22555224	220K ohm
R23, 24	22555331	330 ohm
R25, 26	22555471	470 ohm
R1	22563153	15K ohm, ±10%, ½W, Carbon Composition
VARIABLE RESISTORS		
VR1	22622006	Variable, 10K ohm, Speed Control
VR01, 02	22658130	50K ohm, Semi-fixed
VR03, 04	22658130	50K ohm, Semi-fixed
VR05	22658461	330K ohm (300K), Semi-fixed
MECHANICAL PARTS		
201	20723055	Sheet, Turntable
202	20723054	Turntable
203	20778151	Cover, Decoration
205	20746088	Stay, Adaptor
206	20798033	Ring, 3φ
207	20798020	Ring, 4φ
209	20871299	Knob, Speed Control
210	20871309	Knob, Play/Cueing
211	20871308	Knob, Size Select/Auto Repeat
212	25733451	Spacer
214	20743073	Cover, Switch
215	20746204	Spacer, Return Lever
216	20753201	Lever, Start Switch
217	20743075	Guide Block
218	20753266	Lever, Switch Lock
219	20753204	Arm, Micro Switch
220	20753205	Lever, Micro Switch
221	20753219	Lever, Cut
222	20753236	Lever, Gear Lock
223	20763217	Rod, Start Switch
224	22125692	Motor, DD
225	25764399	Washer, Teflon
226	25771883	Spring
228	25776042	Spring
229	25773403	Spring, Torsion
230	25771934	Spring, Gear
231	25776007	Spring, Cut
232	25771885	Spring
233	20727037	Gear, Main
234	20753199	Lutch
235	20753200	Lutch
237	20763219	Rod, Size Select

TURNTABLE SECTION

Symbol No.	Part No.	Description
238	20763221	Rod, Cut
239	20746202	Bracket, Cueing Lever
241	20773236	Collar
242	20751155	Lever Ass'y, Cueing
243	20753212	Lever, Read-in
244	20753213	Slider, Repeat
245	25773325	Spring, Read-in Lever
247	20746203	Cushion, Return Lever
248	20753214	Block, Lift
249	20753215	Lever, Cam
250	20753216	Lever, Read-in
251	20751189	Lever Ass'y, Cut
253	20871300	Knob, Speed Select
256	20753209	Latchet, Repeat
257	20753210	Slider, Read-in
258	20753224	Cam, Start/Stop
259	20753225	Cam, Cueing
260	20753226	Slider, Repeat
261	20753227	Cam, Size Select
262	20753229	Slider, Start/Stop
264	20763218	Pin, Control Cam
265	20773077	Ball, Steel
266	25773332	Spring, Cueing
267	25774514	Spring, Control
270	20711087	Panel, Turntable
274	22707260	Screw (TRS), 4ϕ x 12mm
277	20788088	Cover, Stylus
278	20788079	Weight, Tone Arm
279	22155079	Cartridge
280	20788084	Tone Arm Ass'y
281	20736041	Head Shell
282	20757026	Cam, Adjust
283	20746213	Spacer
284	25735159	E Ring, 1.5ϕ
285	25735222	E Ring, 4ϕ, Special
286	25771902	Spring
288	22701237	Screw (BID), 3ϕ x 6mm, Tapping
290	25772456	Spring, Read-in
291	20746227	Plate, Friction
292	20791077	Washer, Cartridge
293	22702141	Nut, Cartridge
294	22707049	Screw, 2.6ϕ x 10.5mm
300	22707054	Screw (BID), 3ϕ x 20mm, Tapping
301	22703203	Washer, 3ϕ
303	22701326	Screw (BID), 3ϕ x 8mm, Tapping
306	22703118	E Ring, 2ϕ
309	22701321	Screw (BID), 3ϕ x 6mm
310	20749089	Reflector
311	20763220	Rod, Cueing
314	22707376	Screw, 3ϕ x 6mm
315	22705021	Rivet, 3ϕ x 3.5mm
319	25772460	Spring, Panel
320	25772461	Spring, Panel

OTHERS

Symbol No.	Part No.	Description
322	20881228	Cushion, Panel Spring
323	20746237	Spacer
325	20746232	Stopper, Rotor
326	25771884	Spring, Cueing
328	25773409	Spring, Brake
329	20746212	Spacer, 3ϕ x 6mm
331	20753269	Rubber, Brake
333	20796032	Nut, 4ϕ
OTHERS		
CABINET PARTS		
351	20017129	Panel Ass'y
352	22824233	Knob, Power
353	22826237	Knob, Recording/Tone/Balance/Volume
354	22824279	Knob, Function
355	22824280	Button, Push
356	22824284	Button, Preset
357	25772496	Spring, Push Button
358	20031072	Decoration Plate, Power Switch
359	20815181	Cabinet Ass'y (TE, AY)
	20815185	Cabinet Ass'y (TU)
360	20861083	Hinge, Cabinet
361	22707147	Screw, 3ϕ x 8mm, Tapping
362	20822080	Board Ass'y, Bottom
363	25817388	Panel Ass'y, Cassette Recorder
364	25774501	Spring, Cassette Recorder Panel
365	25817630	Cover Ass'y, Cassette
366	25774297	Spring, Cassette-up
367	20015163	Plate, Jack (TE)
	20015171	Plate, Jack (TU, AY)
368	25845528	Bushing, Power Cord (TE, TU)
	25845556	Bushing, Power Cord (AY)
369	22828064	Leg
370	20842136	Sheet, Felt
371	20031070	Cover, Radiator
372	20018115	Cover, LED
373	20847105	Cover Ass'y, Dust
374	20861067	Hinge, Dust Cover
375	22707003	Screw, 4ϕ x 8mm, Hinge
376	22705022	Rivet, 3ϕ x 5.5mm
377	22707451	Screw (BID), 2ϕ x 5mm
378	22707452	Screw (BID), 3ϕ x 5mm
379	22707453	Screw (BID), 3ϕ x 16mm
380	22707454	Screw (BID), 4ϕ x 8mm
381	22707115	Screw (BID), 3ϕ x 8mm, Tapping
382	22701326	Screw (BID), 3ϕ x 8mm, Tapping
383	22707389	Screw, 3ϕ x 40mm
384	22707040	Screw, 4ϕ x 6mm

OTHERS

Symbol No.	Part No.	Description
		ACCESSORIES
	20971046	Adaptor, 45r.p.m.
	22124461	Feeder, Feeder, Aerial
	22902251	Owner's Manual
	22154213	Microphone, 6.3ϕ, 500 ohm (TU)

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